



Loïc E338 ZIMMERMAN

Currently working as Senior Character Artist for a French games company, Loïc appears to be able to turn his hand to 3D, photography and digital painting with ease! He combines all 3 to create some truly stunning images. Take a look for yourself inside this month's mag...



ARTICLES

Cooking up Tofu: The Making of *Zombie Dearest*, plus WIN one of 13 copies of 'Tofu the Vegan Zombie: *Zombie Dearest*' DVD, and more!



INTERVIEWS

Wiek Luijken, Loïc 'e338' Zimmerman & Midway Games



GALLERIES

André Cantarel, Sean Dunderdale, Sergio Santos, and more!



MAKING OF'S

'The Alchemist Room' by Ognian Bonev



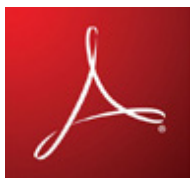
TUTORIALS

3D Environment Lighting - Part 6: Underwater, and more!

e338



of **13 copies** of Tofu's latest adventure animation: *Zombie Dearest!* We've already got our copies in the studio and we love it, so check out **PAGE 64** for your chance to win, win, win!!! My personal favourite this month is our interview with the talented and unique artist, Loïc 'e338' Zimmerman, which you can find on **PAGE 25**. Wiek Lujiken too left me breathless after reading his interview - he's such a busy guy he could certainly teach us all a thing or two about time management and getting the most out of life! Be sure not to miss that one anyway, as you'll feel the need to get busy after reading it, trust me! Actually, all our articles are great this month, so get reading, get inspired, then send us your fantastic creations, of course! Simply check out the content to the right, flick to whatever takes your fancy and get stuck in to this mammoth issue! Finally though, a little sadness... We have, I'm afraid, come to the end of our 3D Environment Lighting Tutorial Series (boo!) which starts on **PAGE 117**, so don't miss this last instalment if you've been following this series with us. Stay tuned for January as we have a great Car Modelling Tutorial Series planned for you - ooOOooh! **Merry Christmas!!**



MAGAZINE VIEWING TIPS:

For optimum viewing of the magazine, it is recommended that you have the latest Acrobat Reader installed. You can

download it for free here: **DOWNLOAD NOW**

To view the many double-page spreads featured in 3DCreative magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large, landscape image: 1. Open the magazine in Reader. 2. Go to the 'View' menu, then 'Page display'. 3. Select 'Two-up Continuous', making sure that 'Show Cover Page' is also selected

EDITORIAL

Welcome to the **ISSUE 28 of 3DCreative**. We've packed this month's issue full of great stuff, just for you... and just in time for Christmas too, so we hope you like it! First up: be sure not to miss the Making Of Tofu the Vegan Zombie on **PAGE 51**, as we have a very special competition this month for all to enter for their chances to win one

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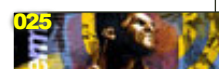
Project Overview by Ognian Bonev

RECRUITMENT

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ABOUT US

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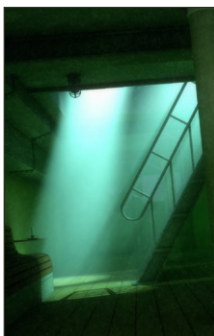
CONTRIBUTING ARTISTS

Every month, many creatives and artists around the world contribute to 3DCreative magazine. Here you can read all about them. If you would like to be a part of 3DCreative or 2DArtist magazines, please contact:

lynette@zoopublishing.com

3D Environment Lighting

These wonderful people are responsible for creating our 3D Environment Lighting Tutorial series for 3ds Max, Cinema 4D, LightWave, Maya & Softimage XSi. Most of them have been with us since the 'Joan of Arc' series and many also worked on the highly popular 'Tuc-Tuc' series...

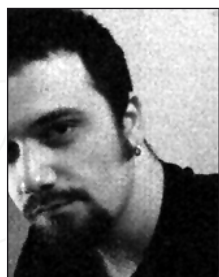


FLORIAN WILD

Otherwise known as "Floze" since kindergarten (even by his Grandma), started CG when he was eight, with Dpaint & some very basic 2D animation software. He wanted to create fabulous worlds, such as the ones he discovered in games like Monkey Island, Le-Chuck's Revenge. He started 3D when he was 15 & got into the industry at 18. He currently works as a buccaneer Artist & TD.

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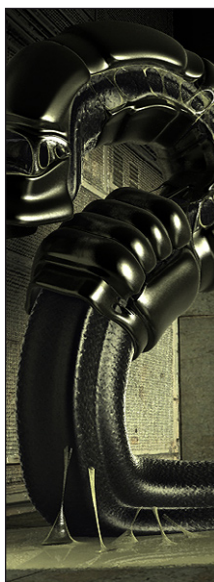


LUCIANO IURINO

Started back in '94 with 3D Studio on MS-Dos as a Modeller/Texture Artist. In 2001, he co-founded PM Studios and still

works there as Lead 3D Artist today. They recently developed the videogame, "ETROM - The Astral Essence". He also works freelance for magazines, web-portals, GFX & videogame companies. He recently left the 3ds Max environment to move on to XSi.

iuri@pmstudios.it



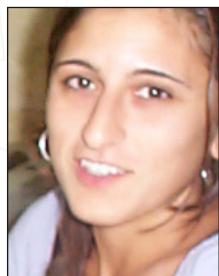
ROMAN KESSLER

Is a Freelance 3D Artist, in Germany.

In '93 he made his 1st 3D model, using a shareware 3D software for DOS that

was very limited. He got addicted & started with LightWave in '97. Since 2005 he has worked professionally as a freelancer. He likes all 3D tasks equally, with little preference to modelling and texturing. Besides client-based work, he also works on personal animation projects.

www.dough-cgi.de



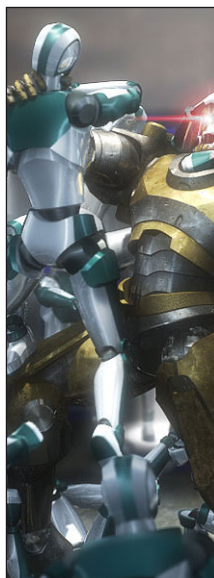
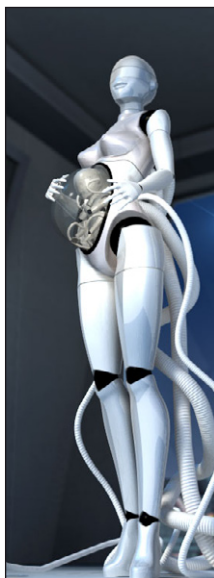
NIKI BARTUCCI

Is a Freelance 3D Modeller, in Italy. She started working in the field of Computer Graphics in 2000 as an Illustrator

& Web Designer. In 2003 she started using 3D software, such as C4D & 3ds Max. In that year she worked on "ETROM - The Astral Essence", an RPG video-game for PC developed by PMstudios. She is currently a freelancer, specialising in commercials.

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GIUSEPPE GUGLIELMUCCI

Is a Freelance 3D Modeller/Animator.

He began using computers with the epoch of the vic20 & Cinema 4D was his

1st 3D software. He started working in the field of CG in 1999 in Commercial Design. In '03 he worked on "ETROM - The Astral Essence", an RPG video-game for PC developed by PMstudios. He currently hopes to work in the video-games industry & develop his own game.

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image by Wiek Luijken



WIEK LUIJKEN

Is Animation Director for Axis Animation in Glasgow, Scotland. He started out in 3D in the late eighties as a self-taught artist.

He started paid work in 3D in 1992 when he transitioned from Raytracers to 3D Studio 1 and LightWave. He's worked in the games industry as a real time artist, animator, cut scenes artist and lead artist, and is currently an animation director by day and an aviation artist by night.

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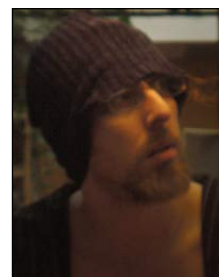
LOÏC E338 ZIMMERMANN

Is a CG artist with 8 years' experience. Loïc 'e338' Zimmermann became famous for his hybrid illustrations

a few years ago. Since then, he has gradually specialised in character design. Though he is increasingly focusing on his personal work, he regularly participates in lectures and is currently working as a senior character artist for Quantic Dream.

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GAVIN GOULDEN

Is a Freelance Character Artist based in Vancouver, BC. He has over 3 years of experience ranging from mobile to next

generation games, and specialises in creating high detailed characters. He has contributed multiple tutorials to the community, and can often be seen posting on game art forums and participating in game art competitions. More of

his work can be seen at his online portfolio:

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NICKOLAS STEVENS

Is a visual effects artist and animator who has been involved in the industry since 2005. Nick is currently working for Branit VFX

in Kansas City. His work has been featured on television shows, such as "Moonlight" and the animated short "Tofu the Vegan Zombie: Zombie Dearest".

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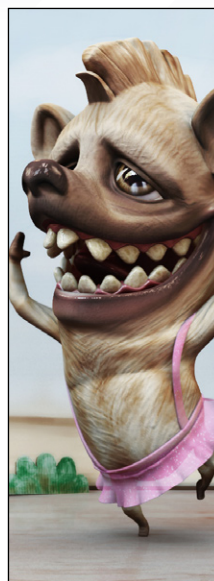
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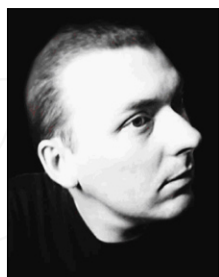
OGNIAN BONEV

Is a 3D/Environment Artist in Sofia, Bulgaria. He started working in the CG field as a freelance artist for different studios in Sofia, primarily doing modelling, texturing and lighting work, but also compositing when needed. Over the last few years he's been working in the game development industry as a 3D/Environment Artist.
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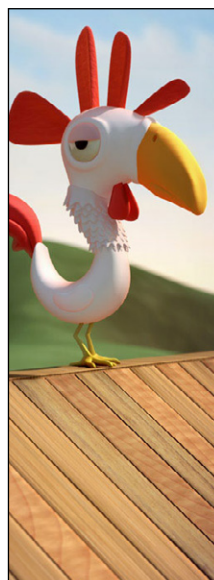
DIEGO MOISES MONTES

Started teaching himself 3ds Max around 1999. He now works for a studio in Seville (Spain) where he's working on a 3D animated film and 3D animated TV series, as a modeller, texturer and rigger. He believes, "the most important thing is not the tool or the technique, but being sure about what you want to transmit".
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WAYNE ROBSON

Wayne Robson is a freelance digital artist & professional author living in Durham, England, behind a keyboard. He's sure he had a life at some point, but isn't quite sure where it disappeared to (he's quite sure he did have one at some point, though). Wayne's DVDs are available through Kurv Studios, including his series, 'Get into ZBrush'.
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CESAR ALEJANDRO MONTERO OROZCO

Is a 3D Artist & Computer Engineer, from Zapopan, Jalisco, Mexico. He believes in the balance in life and all of its aspects, and appreciates his health above anything else. His future career goal is to tell compelling stories using CG in feature films.
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WOULD YOU LIKE TO CONTRIBUTE TO 3DCREATIVE OR 2DARTIST MAGAZINE?

We are always looking for tutorial artists, gallery submissions, potential interviewees, Making Of writers and more. For more information, send a link to your work here: lynette@zoopublishing.com



image by Wiek Luijken

DIGITAL ART MASTERS: VOLUME 3 CALL FOR SUBMISSIONS

Following in the success of our first two books in the 'Digital Art Masters' series, we would like to announce the 'Call for Entries' for the third book in the series 'Digital Art Masters: Volume 3'.

'Volume 1 & 2' of 3DTotal's book series, featured some of the best 3d & 2d artwork from such artists as Marek Denco, James Busby, Natascha Roeoesli, Philip Straub, Rob Chang, Jonny Duddle, Benita Winckler, Ryan Lim and Fred Bastide. The one thing that set the 'Digital Art Masters' series apart from other gallery/catalogue books was the fact that we wanted to show the readers how the images were created, so each artist wrote a breakdown overview to accompany their piece in the book.

'Digital Art Masters: Volume 3' will again be showcasing some of the finest 2d and 3d images from talented artists across the globe. Initial submissions need to be of your final image only to enable entrance into the selection process. Chosen artists then need to supply an additional text overview with 'making of' and 'work in progress' images. See samples at bottom of page to give you a good idea of what is required.

Schedule and Calendar for all submissions is available from this web link:

http://www.3dtotal.com/damv3_callforsubmissions/



RODRIGUE PRALIER



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NICOLAS LESAFFRE

"TO BE HONEST, I HAD A KICK ASS TEAM TO WORK WITH, AND I LIKE TO GIVE ARTISTS THE CREATIVE LEEWAY TO MAKE THINGS LOOK AS GOOD AS THEY CAN WITHIN THE INITIAL VISION I'VE LAID OUT. THE GUYS DID AN AMAZING JOB THAT DIDN'T NEED MUCH IN THE WAY OF MEDDLING FROM MY END AT ALL."



WIEK LUIJKEN

Wiek Luijken trained in the field of Industrial Design Engineering, but has now specialised in 3D graphics. This month we chat with aviation enthusiast, Wiek, who is also the founder of 'Aviation Arthouse' - a website dedicated to showcasing high quality aviation artwork...



WIEK LUIJKEN

Can you tell us a little about your background and how you came to be where you are now?

For me it all started as a kid. I had a grandfather who was a very talented painter and founder of an art academy, a mother who loves art and used to draw with us all the time, and a father with a more technical background, but at the same time creative. My parents had

their own business at home, so I had access to computers, a copier, a printer, plotter, paper, traditional drawing table, etc., and a mother and father who always stimulated me to explore and be creative.

When I went to university to study Industrial Design Engineering in 1991, I was already capable of making complicated technical drawings in AutoCAD and had been making images with raytracers for a while (DKBtrace, Polyray and later Povray). At university I got my hands on 3D Studio 1, and in my first year I was working for the university as an illustrator providing images for certain courses. By the second year I was teaching 3D to older





students on a course for third year students, on 'Electrogig 3D-GO'. Also, at university, we got introduced to drawing with markers, fineliners, pastels and so on. I absolutely loved that! We got very thorough lessons in drawing properly in perspective and without using rulers. After hours I was also teaching some other students the finer points of drawing by hand. Unfortunately I haven't really continued drawing by hand, but it's certainly knowledge that helps you in 3D art, as well.

But besides that, I also got to know the Internet, which was still very new and clumsy at the time. Through telnet, FTP and email on the only Internet capable computer in the building,

I managed to work with a couple of American artists and coders on a side-scrolling 'shoot-em-up' game. That went on for two years and got me introduced to LightWave. I scraped money together to buy a second-hand copy with a training book, and got hooked on it.

During those university years, I was active as a freelancer creating various artwork to make some extra money; this included the placement of virtual windmills in photographs for planning permission, creating artwork for games, and so on. Together with two other students, I started my own company in 1995, which was based in my living room for a year and was filled with 7 artists and coders working on an Internet golf

game and a documentary. We had no reason to be bored: my old freelance contacts made sure we were filled to the brim with paying work, leaving no time whatsoever to be a student. The business thrived and I spent day and night creating artwork, teaching employees and managing production. After five years of creating animation for game cinematics, half the time and technical animation for the oil industry and ship builders for the rest of the time, I decided to sell the business and get my Master of Science degree by designing, developing, and prototyping a low cost, real time facial capture system on my own. So, after 10 years as a student, I finally finished.

A big dutch games company hired me as their animation director, setting up the animation division with the plan to work on commercials, TV series, as well as game cinematics. The company was about 250 people big, but soon the cracks began to show; 100 people were made redundant, then more followed, including my team. I ended up in the final group of 20 people left, creating cinematics in LW, in game animation and so on in 3d Studio Max.

From there I moved to Sheffield with my wife, where I got a job for Particle Systems, part of Argonaut games. That was great; I met so many talented people there and got to work on a cool games project. A year later we returned to the Netherlands where I joined Guerrilla Games as Lead Cinematics, and within months I was Lead Artist responsible for a team of 30 talented artists. This involved not just creative but also management and planning tasks, which I was very familiar with from my earlier experience. After two years of that I decided to leave and get into cinematics and more high end 3D, again. I got offered a job at Axis Animation in Glasgow





as head of production, a more management oriented job at a company that does amazing artwork for commercials, game cinematics and short films, amongst other things. Having been on the production side of things for a year, it was too tempting not to get involved creatively, and I am now officially an Animation Director again. Amongst other things I've directed the Colin McRae Dirt trailer for Codemasters, which you can see on the Axis Animation website or on Gametrailers.com.

All of this has obviously had it's influence on my personal work, as well; the techniques I've learned and the experience I've gained over the years have enabled me to also improve on my aviation art. This culminated in two things last year: opening my own online aviation art gallery which features the work of great artists that do not get a chance in the existing traditional, big galleries; the other thing was my first real life art exhibition, which was a big digital aviation art exhibition in the Militaire Luchtvaart Museum in Soesterberg, the Netherlands. As far as I know, it was the first in the world featuring digital aviation art, specifically. The exhibition idea originated from a meeting with the museum staff after I sent them an email with a couple of images to see whether they would please consider having one my of pieces on their walls. They wanted a bit more than that, and a long time later there was a big exhibition which featured work from myself and two of my friends.

W. Luyken



Another important influence over the years has been the support of my wife; she has stood by my side without ever questioning the countless hours I've spent on my aviation art; always supporting new ideas, new plans and so on. Even now we have two little boys, she'll allow me my 'art time', even though it means less help in the household for her. Without that support and sacrifice I would never have been able to do what I do. Not just that though, she also loves

going to air shows with me and has a keen artistic eye, too! I'm very lucky... as it is a team effort.

You mention getting involved creatively again as an Animation Director. Can you talk about your role on the recent Colin Mcrae game and explain what the job entails exactly?

My role was basically to do the directing of the trailer. Codemasters supplied Axis





Animation with a briefing which contained the basic parameters to which we could write a creative pitch. I've written the initial script which we altered several times after talking to Codemasters to fit their wishes better. From that initial script, all the way to final grading, I was responsible for the look and feel of the piece - pretty much like a movie director, just on a smaller scale. For the pre-production, my tasks were to create mood boards for each

sequence, to guide our storyboard artist, create 2D and 3D animatics, to visualise some of the sequences for the client and the team, and so on. Some of the camera moves were pretty hard to imagine from script, so I found it very helpful to be able to animate these roughly myself and make it much more obvious to everyone else involved what I was after. Once we had a storyboard, I took that into Premiere to make a 2D animatic with temporary music to get

a better feel for pace and flow of the trailer. This was then combined with the previz sequences to create a mix of 2D and 3D animatic. Later on, directing camera motion and car animation was the obvious big task to look at, in combination with art direction for the environments and assets. To be honest, I had a kick ass team to work with, and I like to give artists the creative leeway to make things look as good as they can within the initial vision I've laid out. The guys did an amazing job that didn't need much in the way of meddling from my end at all. Later on we pretty much did the quality control with the whole team, having regular viewings to pick up on errors and make the whole thing as good as we could within the tight deadline.

Can you explain your fascination with aircraft and aviation as a subject, and maybe describe where your interest stems from?

My fascination with aircraft might have had something to do with reading Biggles as a kid, but also living close to Volkel Airbase, seeing jets roar overhead every day. The walls of my room were covered in posters of aircraft and I used to draw aircraft all the time - even being so bold as to send my drawings to big military jet manufacturers when I was about 10 years old, for which I got some nice posters in return. Once in a while we'd go to an airshow, which was just amazing - there's nothing like seeing a jet on full afterburner roaring along the runway, or the sound of a spitfire as it flies past. When I was old enough to cycle the 20 kilometres to Volkel, I'd go there to watch the F16s take off and land sometimes, or visit the local airshow by myself. Later on I worked all summer so I could pay for a hang-gliding course, which was just amazing!

My interest is mostly with modern helicopters and old aircraft; for instance early second world war but also early jets. There's something romantic about old aircraft: the smell, the sound, the simplicity. I guess the same thing that can be said about old cars - they're just special. And don't get me started on flying boats! Surely one of the most interesting and good looking forms





of transport ever! It's mainly military aircraft that interests me; I guess the way they were flown and their performance speaks to the imagination a bit more. Why fly at high altitude in a boring straight line if you can be down in the weeds dodging trees and hills? Then there is the historic side of things; the way individuals could actually make a difference when they were flying (instead of being just more cannon fodder in the trenches), and were facing enormous odds, like in the Battle of Britain, stretching human endurance to the limit. By no means would I ever want to glorify war; it is a nasty business that has never done anyone any good. But at the same time we should not forget about the past. With my artwork I try to make the past come alive, and not just from one side. On both sides, in every conflict, there are people fighting that have fought for what they believed in or fought because they wanted to defend their family and friends, or simply to live another day.

When starting a new image can you talk us through the stages of preparation and how you go about deciding on the lighting, composition and any historical significance behind the picture?

The first stage of preparation is the creation of the 3D models with their appropriate shaders and textures. This is a fairly lengthy process that can really make you 'forget' your original intentions that made you build the aircraft in the first place. Dependent upon detail levels, creating a model can take between two weeks and three months. Anyway, most of the time I get to research or come up with ideas for new images during the build process, which might result in the need to create more models (for a dog fight, for instance). I have a big list of aircraft that I would like to build, which all interest me for different reasons. Sometimes I build specific models on request for a commission; sometimes I build a model because it fits with my existing collection.

Once you have your model, it's time to research the appropriate markings and paint schemes that fit the aircraft and the image you have in

mind, which sometimes comes after you have the general layout of the image done. To be honest, the way I come up with a composition varies a lot. For some images I have a composition in my head when I start, whereas for others I have a general idea of what I am looking for and the image evolves as I go along. I read a lot of pilot biographies and books describing actual events specific to the aircraft in question. Whilst reading the book I mark sections that make for interesting background stories for images with post-it notes. But more often than not I make images that appeal to me as artwork - not because they are a photograph of an exact moment in time as it happened. You could say most of my images are moments as they could have been. I'd rather create something that most photographers wouldn't

W. L. Luyken





have had a chance to shoot at the time, and would look a bit more filmic.

Sometimes the inspiration comes from a certain background photograph I have taken which just begs for a certain scene. Photography is another big hobby of mine, which comes in very useful when looking for backgrounds. At other times, the backgrounds might be completely painted, or combinations of 3D, photographs and painting. I am looking into painting more and more for backgrounds as it enables you much more freedom in composition and lighting. Obviously these background techniques come into play when you have a composition that works, but not an appropriate background yet.

I might find a composition that works in 3D by placing the aircraft, camera and lights in a certain layout, placed in a real simple background gradient that signifies placement of horizon in the picture and gives an idea of colour. Then in Photoshop I roughly paint in a background to see if it really is going in the



W. L. Luyken

direction that I have in mind. Another thing I do is keep an 'unfinished' folder. One of my curses is having too much inspiration for my own good. In the old days it caused me to rush and get an image done so I could work on my latest idea. Nowadays I try not to; I either finish an image to a level that I'm happy with it, or else it goes into the 'unfinished' folder. In there I have many concepts and unfinished pieces that have the potential to be good images, but I either had no time to finish them, the models weren't textured

yet, or I just couldn't finish them for other reasons. Once every so often I go through that folder and pick one to finish.

What software do you generally use, and after the rough Photoshop block in, how do you integrate the aircraft successfully into their backgrounds?

For the 3D side of things I exclusively use modo at the moment (on Windows); it offers everything I need for still images and is the best modelling

software out there with some very useful baking and painting tools thrown in. After getting the render as close to final in 3D as I can, Photoshop is used to do a lot of post-processing and painting to get it to where it needs to be. For background integration I use a combination of fresnel reflection and global illumination to get colours that fit in with the background. Then in Photoshop it's a matter of cleaning up the edges and doing some corrective painting where needed. Animation, I've not got around



to doing in it yet, but for that I used to use LightWave in combination with custom written tools in Visual Basic to be able to do what I wanted. At the moment I am learning Houdini, which we have introduced at work. That should be an interesting tool to add to my pipeline as it enables me to build the custom solutions that I used to code in VB - things like cloud rendering for instance, but also getting animation data directly from flight simulations.

Of all your images to date, which are your favourites and why?

I have a few favourites for different reasons, as follows:

Mowing the lawn: Even though it's old now, it's full of action and speed. One of the first images where I managed to achieve the style that I still like, where I used a lot of painting and matte painting to get what I wanted. Plus it features one of my favourite aircrafts: the fokker G.I.a - an amazing design that could have been much

better known in different circumstances.

Furball: This one of my best, but at the same time the image that made me decide to stick with what I want as an artist, not what everyone else thinks should happen. After this image, things changed forever.

Desert Spitfires: My best work in my opinion. I just love the spitfire - it looks great from every angle and is just a thoroughbred. This particular image is one of those that just clicked when I



made it; it didn't take extremely long to do but involved *a lot* of painting and post work. It's one of the works I created in time for the aviation art exhibition last year; a lot of pressure and a short time available to create new work, and yet pieces like this one and Furball came out.

What are the most challenging aspects to creating aviation art and what are the common pitfalls facing newcomers to the genre?

The most challenging is that, to be good you have to be good at many different disciplines that all are not easy to learn. The modelling in itself is a big challenge with complex shapes; the UV-ing, texturing and shading are demanding for various reasons; historical research, photography, post processing, painting, lighting, composition - all of them take time and experience to master. I've been doing this for many years now and there is still so much to learn and improve on!

What I find most challenging is balancing the time between creating new images, new models, learning new techniques, growing as an artist and actually finding the time to sleep. Another thing is that it's hard to be original - there are only so many ways that you can depict an aircraft. A lot of people become complacent, cease to be innovative and cease to grow. When that happens, you cease to be an artist. Common pitfalls are people not spending the time to observe. You can learn a lot from photographs, from other artists and artwork. Buy some books from





& F-86F-1 'THE HUFF'

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different traditional aviation artists, like Michael Turner or Michael Taylor, and look at how they find solutions for lighting, texturing, composition and background. Don't copy, but learn! Talk to fellow artists, share experiences and techniques. Another thing: don't expect to get rich doing this sort of work; well, not rich in money anyway. There is not a big market; most people only want to buy traditional art because they still think it's a press of a button on the computer if you created something digitally. If you do sell work, it is never for a lot of money. You'd make more money working in a supermarket restocking the shelves. Do this for yourself, because you have a passion for it - that's all.

Tell us about the impetus behind your website, **www.aviation-arthouse.com**, and how you choose which artists to include?

I have quite close contact with a couple of very talented artists who all had the same problem I had. We didn't want to spend too much of our time marketing ourselves and trying to sell our art. It's all about creating the art in the first place. However, these guys produce artwork at a very high level and have similar dreams to myself. We all want to be full-time aviation artists eventually. The only way to get there is to get noticed and start selling.

I had tried in vain to contact existing galleries, who are all allergic to digital work and basically sell the work of only a couple of very high profile

traditional artists, it seems. So I decided to do it myself and invite my friends along for the ride. The idea is to only show work that's of a very high standard, even though almost none of us are full-time aviation artists. The artists on display are all very talented people who haven't had a lot of exposure. We're still open for new artists by the way, but because it's such a small world, everyone knows everyone it seems. In my opinion we feature the top 5 artists in the world of digital aviation art already, and would like to get some more traditional art up there as well, as it shouldn't be an exclusive thing where medium is concerned.

You have a section on the site dedicated to tanks. Do you see yourself branching into new categories, such as ships for example?

Most definitely! Personally I want to do some tank artwork as well as it offers very different and interesting challenges. Ships I've made in the past already, I've just never done any proper artwork with them. If there are any artists out there who create artwork of ships/sail boats/tanks/trains etc. that should be featured on Aviation-Arthouse, they should definitely get in touch. It was never meant to be just aviation. For the tanks and ships, I've also registered another website name: www.oilontheboil.com

Finally, do you ever play any war based computer games or flight sims, and if so do you find the historical detail to be accurate in the main, or do you see evidence of poor research sometimes, and finally do you enjoy these types of games?





Well, I've always been a very active gamer both on consoles as well as on the PC. Obviously flight sims have been a part of that. In the past I've wasted many, many hours of my life playing shooters, race games, strategy games and so on. In a way, for me, game play is more important than historical accuracy. I can enjoy games like Ace Combat immensely, even though they are complete fiction.

Flight sim wise I find IL-2 most enjoyable. It is great for online play and I'm one of those sad people who have invested quite a lot into things like joysticks, rudder pedals and track-ir (head tracking equipment). Obviously it appeals to me a lot because I'm into Second World War aircraft. Besides the obvious bias towards Russian aircraft in the game, there's never been a game with that much historical research and accuracy, I feel. I also have a copy of Microsoft flight simulator, but find it immensely boring, I must admit.

My favourite games at the moment are Medieval Total War II, Rainbow Six Vegas, IL-2 and Company of Heroes.

WIEK LUIJKEN

For more work by this artist please visit:

<http://www.luijken.com>

www.aviation-arthouse.com

Or contact them at:

wiek@luijken.com

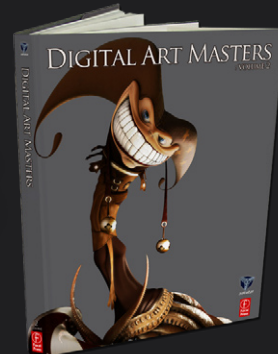
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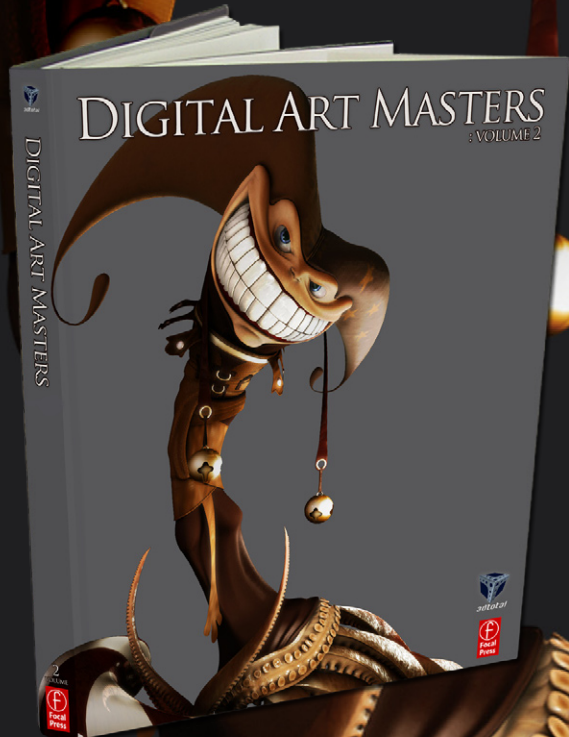
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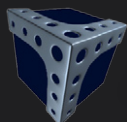
FEATURES 58 OF THE FINEST DIGITAL
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Loïc Zimmermann

Currently working as senior character artist for a French games company, Loïc appears to be able to turn his hand to 3D, photography and digital painting with ease! Then combining all 3 to create some stunning images. Take a look for yourself...



"I DECIDED TO SIMPLIFY AND DO A HOT CHICK PIC, WHICH WAS A GOOD IDEA SINCE ALL THE OTHER CHARACTERS WERE, WELL... WEIRDOS."

DANGER
ZONE

Loïc e338 Zimmerman

Hey Loïc! Just been whiling away some time checking out an 'Online Mess – Hot like a Nacho', and I gotta say, I like it! Here's the link for all the readers to click and have a look for themselves: www.e338.com, but before they dive out of their PDF reader into the world of Loïc... let's hear what the man himself has to say about a little introduction to his life and online portfolio. Over to you, Loïc!

Gosh, that's a tricky way to introduce people! Okay, let's go for it - the faster, the better. My name is Loïc Zimmermann, aka e338. I'm

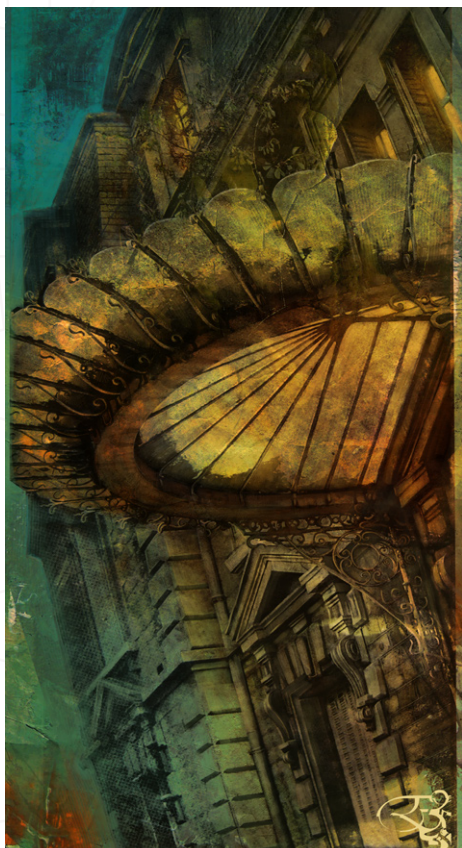


a 33 year old CG artist, working as a freelancer, although I have had many experiences inside companies. My heart is bouncing between 2D and 3D, and in the end I guess this is of no importance, as what matters is confusing the audience and making them focus on the result. I've been working in this field for the last 8 years, prior to which I was class instructor (my early beginnings), which is something I still do from time to time through workshops (open call). I specialised in characters 5 years ago - my favourite subject, even when I was drawing as a kid (now I just draw like a kid!), but I also enjoy working on some moody landscapes

and urban pictures (photos/collage/painting).
At the moment (and for quite a while), I'm working as a senior character artist for a French videogame company, called Quantic Dream, on their up-coming project, Heavy Rain on PS3. I find it very interesting, but apart from that I also work on some smaller projects, and, of course, personal activities such as illustrations, clothing, etc... When I don't work, I flush my brain in front of some series, or I go down town and drown in alcohol, which can surprise people who definitely think I'm just a bear living in a cave. I'm Jack's lack of relationships!

Do you find that drawing and painting all day at your job is good for your motivation and inspiration when it comes to doing your personal projects in your own time, or that your work life sucks a lot of the creativity out of you?

Drawing is a minor part of my activity. I do illustrations from time to time for some clients, but most of my days are 3D driven, but your question still works. It can be hard sometimes to spend a day working on the modelling of a face, and work your night on... the modelling



of a face! Hahaha. It can be worse when both schedules are fully synchronised and you have to fix UVs at day and the same at night. Now, regarding the creativity, I don't expect this to happen at work. I had big expectations when I was younger, but I no longer do. The financiers, the hierarchies in companies... all those guys have their word to say and in the end things end

up washed up. This is where personal works become necessary and help me in accepting those frustrations. Nowadays, I even prefer being a simple character artist with no specific creative things to do. For sure, the day I'll have full control over the look of a film or a game it'll be freaking insane. Any brave volunteer in the room? Anyone?!

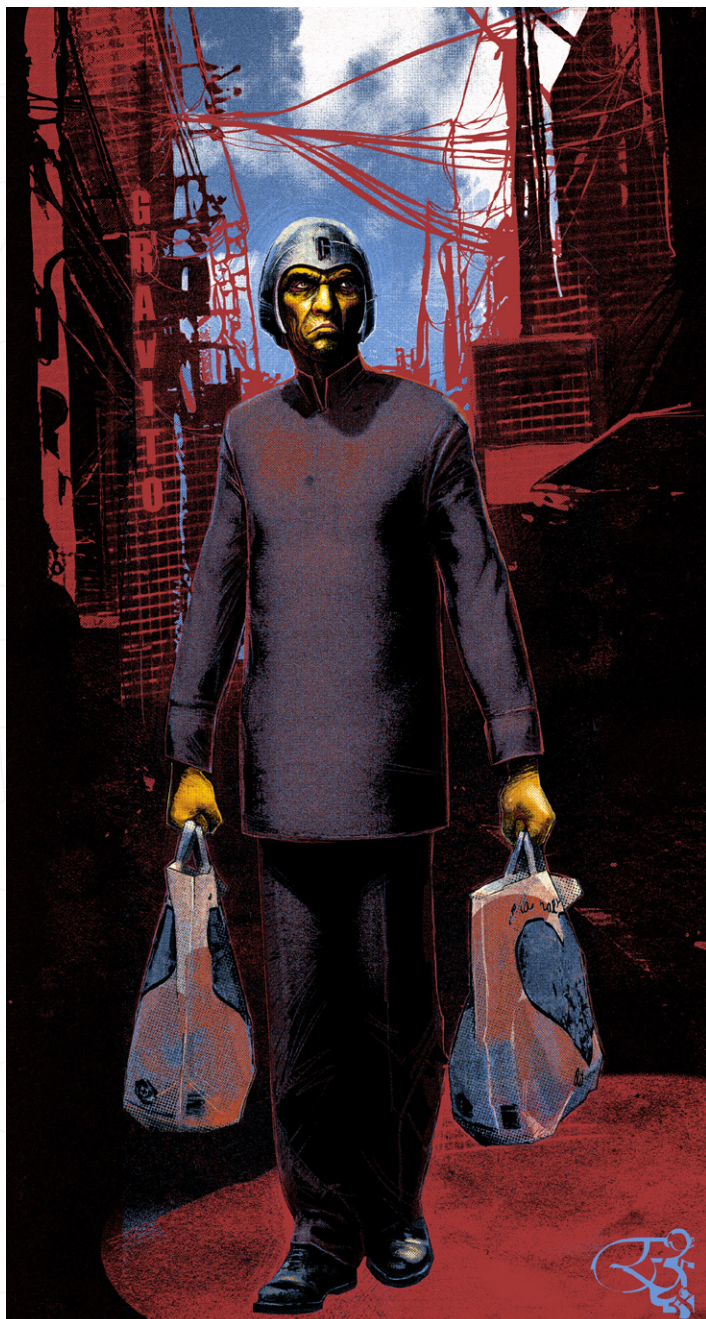


DANGER
LINE



Zmen are cool! I especially like Dangerine's Stance and attitude, Gravito's shopping bags and Tempest's nakedness. What were your ideas behind this series, and what did you want to achieve?

The whole series started with a script that a friend (soul mate) wrote for me, called the Z men, and which is supposed to be a comic book in the end. Since I had the opportunity to work on an exhibition last year, I decided to do portraits of the main characters. Bolino (the author) had some precise ideas about them, and I simply took a particular aspect of each to do stills. It's like the X men transposed into the Twilight Zone, keeping some dumb aspects of their personalities and creating a very realistic world around them, still with superpowers. Wolverine, here called Dangerine, is just a rough, tough Canadian motherf***** with similar powers to the original, but definitely a first degree guy. Magneto (Gravito)



is obsessed by power and mutant revolution, but has to deal with ordinary life and an idiot crew. Tempest is one hot, black feminist babe who hates the entire world but belongs to the "good guys" and has to deal with it. So, you see, I simply had fun with them. It's full of personal references. I must say the idea for Tempest was way more harsh, but due to a lack of time preparing the exhibition, I decided to simplify things and do a hot chick pic, which was a good idea since all the other characters were, well... weirdos.

Well it sounds like it would be a very entertaining comic to read! I noticed a couple of other superhero-based pictures in your portfolio, such as the Dare Devil fan art, and other characters definitely have comic book character traits. What is it you like best about creating this type of character images?

The story written by my friend is really cool. Now it'll be up to me to make it look good!



Comic books characters? Yeah. It's a kid thing. Like a lot of us, I was reading and enjoying comic books a lot. Being able to do some cool pictures with such characters is great. And I confess that I smile to the idea of a young fellow watching one of my pictures and thinking he wants to do this for a living. It's a bit of a cliché, I know.

Yes this shows in a lot of your images. The background textures and graphical elements really work well. What software packages do you prefer to work with? And do you think you are continually developing and evolving your style with these packages?

And the nominees are: Maya, ZBrush and Photoshop. I'd love to use Painter but so far I can't find the courage to test the 100K brushes there are in it. Shame on me! I've been using Photoshop for 14 years now; my use of it has changed a lot since the beginning. And I think that every year or so, I tend to shift my style a bit, in order not to rely on what could become a bunch of lame tricks. Since last year I've been experimenting with silkscreen prints. Because of that I've created a new palette of tools, specific brushes, and a brand new style. Technical limitations can be a very good thing: fresh air!



You specialise in characters, but one of your images that really caught my eye is the Devils Workshop. Can you tell us a bit more about this piece? Do you study architecture at all, or favour any particular styles?

This one belongs to a series called "Nuits Américaines". I started by walking down the streets of my town, taking pictures. At home, I picked up some to do illustrations from. I did the same as mentioned before: noise, texture, collage, etc... Then paint, paint, paint! All the photos were taken during the day, and transposed into night lighting. This is why it's called Nuits Américaines, like the old cinema trick.

I'm very impressed and would like to try and do some art like this myself! Do you have any tips to the type of photos you need or what areas of the process to concentrate on the most?

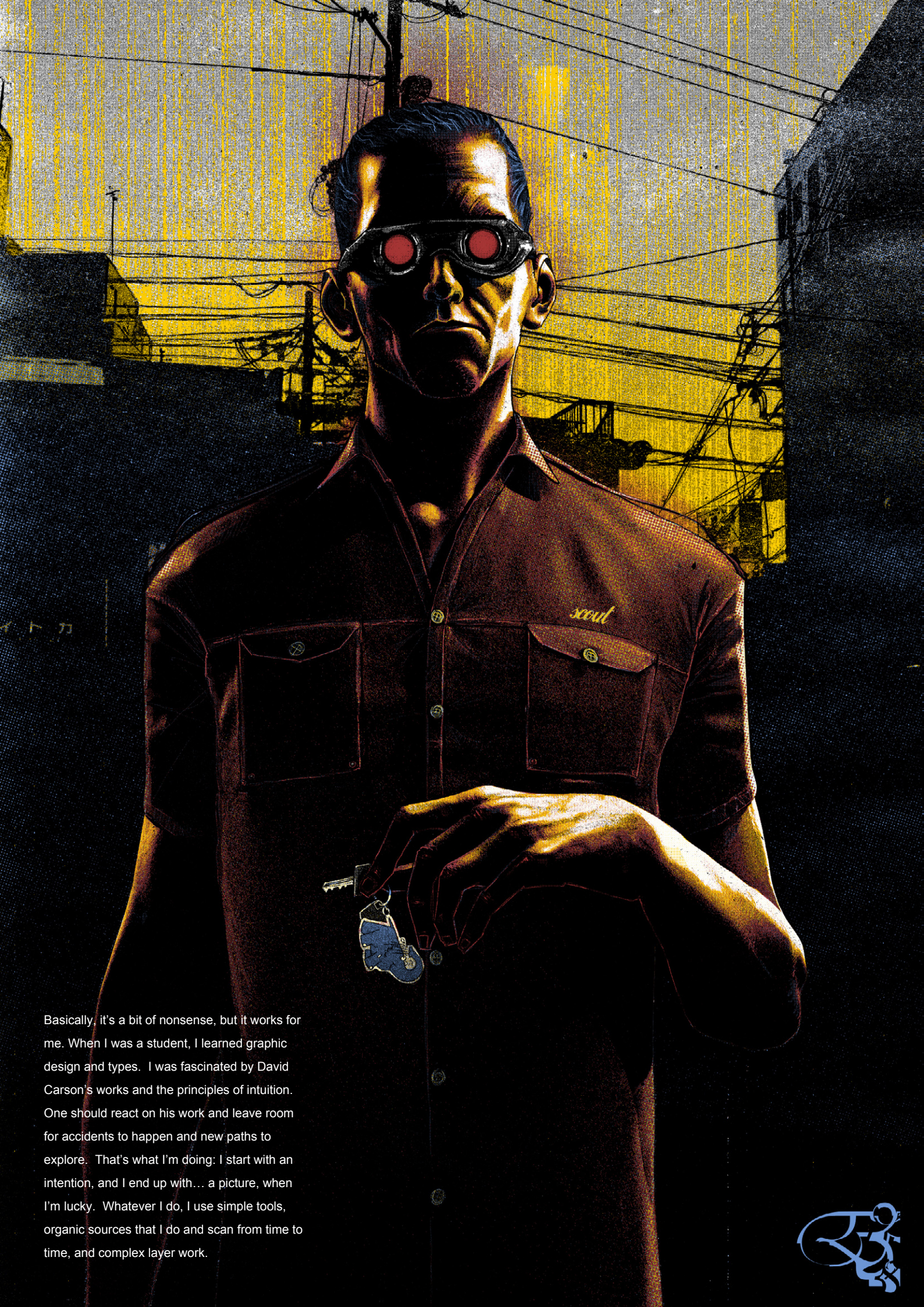
Hmmm. You have to take global shots as well as close-ups. You have to pick up many



different angles, as this way you can combine them and create strange perspectives. You should avoid a clear sky since it creates sharp shadows. Shadows are easy to create, and boring to remove. Now, for the rest, it's a matter of style and goals.

I find it hard to determine which elements of many of your images are 3D and which are 2D. Can you tell us a bit more about your techniques and maybe a secret or two in achieving such a consistent finish when mixing media, as you do?

The thing is, I'm dead scared with the white page and I don't like my drawing so much. So I'm using 3D characters as a starting point, and/or photos (background mostly). Then I do touch ups and collages to compose the picture. Then I paste a lot of textures on top because I hate clean images. Then I clean up by over-painting.



Basically, it's a bit of nonsense, but it works for me. When I was a student, I learned graphic design and types. I was fascinated by David Carson's works and the principles of intuition. One should react on his work and leave room for accidents to happen and new paths to explore. That's what I'm doing: I start with an intention, and I end up with... a picture, when I'm lucky. Whatever I do, I use simple tools, organic sources that I do and scan from time to time, and complex layer work.





What can we expect to see from you next, Loïc?

I'm planning a crazy animation with the digital double I made for my tattoo project. I think I'll also work on the design of my other arm (referring to the tattoo again). I'll make a bunch of new illustrations in collaboration with my silkscreen dude in order to do prints and artworks for exhibitions and also to feed my online shop; more clothing too, and a secret project in this field that I cannot mention yet. I'll also probably start a comic book with my fella, Bolino, for the end of 2008 if I can find time. And... work for a living, of course. Feed the cats; watch my garden grow. Find a wife; have kids? Run as a candidate for the next elections...

Sounds brilliant! We wish you the best of luck with everything, Loïc! Just keep on impressing and inspiring us with your crazy ideas and fantastic images and we will be happy.

Thanks to you for this interview and for taking the time to target your questions. Cheers!

LOÏC E338 ZIMMERMAN

For more work by this artist please visit:

www.e338.com

Or contact them at:

info@e338.com

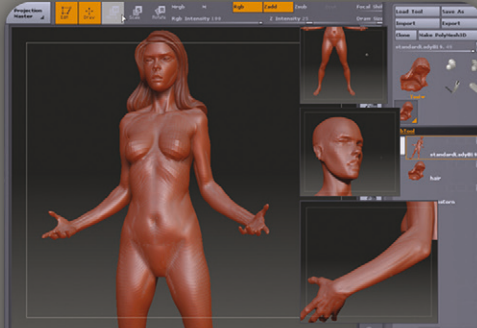
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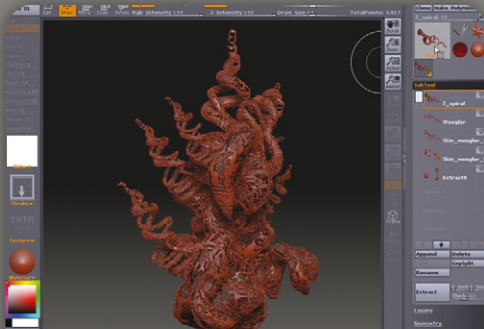
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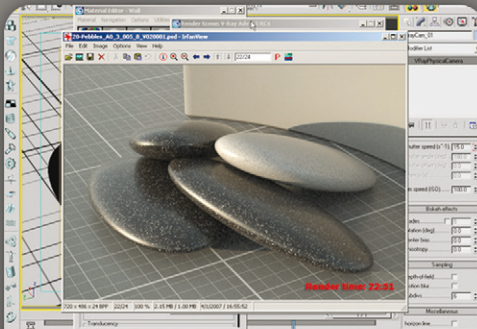
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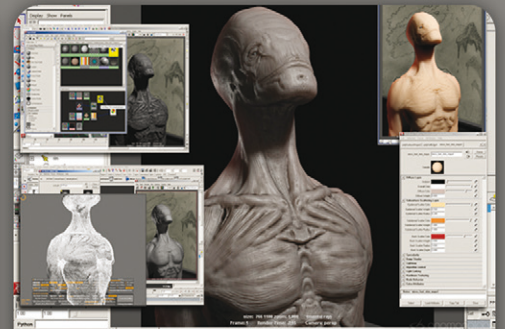
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"THE WHOLE PROCESS WAS
MADE QUITE A BIT EASIER
BECAUSE JOHN WOO WAS
WILLING TO HAVE HIS
WHOLE BODY SCANNED..."

Midway is the very successful company behind the recent John Woo title, Stranglehold, and the highly anticipated forthcoming, Blacksite. We talk to the people responsible for developing the games and get an inside view on the development and design pipeline, as well as an exclusive look at some of the sumptuous artwork...

MIDWAY

MIDWAY

STRANGLEHOLD

Can you describe the essential premise behind the game and the kind of gameplay you wanted the player to experience in Stranglehold?

Neill Glancy - Lead Game Designer:

In creating Stranglehold we wanted to give players a really authentic Hong Kong action experience. John Woo's style has been much imitated in both movies (The Matrix) and games (Max Payne), but neither tapped into the Hong Kong universe. We wanted to give players a new place to play an action game that hadn't been done to death, and a new way to play by really emphasising the cool interactions Inspector Tequila could do in the world.

It was extremely important in designing all



aspects of the game that it was as easy as possible to control, and although the final version of the game features several buttons, you can, if you choose, play it with just two (shoot and interact). We also wanted to capture the "gun ballet", which is typical of John's work, and I tend to categorise this as two important things. Firstly, you have the "in-air experience" in slow motion, or "Tequila Time" as we call it. When in this state you can change your orientation in the air and shoot in multiple different directions, fluidly. This gives Tequila the ballet-like elegance as he flows through the air dealing death in all directions. The second I think of as the massive destruction, or "Massive D". When looking at John's moves, you see



stuff exploding all around the frame, and when in slow motion it's really beautiful to see all the fragments spin and bounce - it's kind of a visual poetry. When you combine these elements in the game with real physics, one touches the other and you have something really special that's never been captured in a video game before.

Tell us a little about the techniques and processes involved in convincingly getting John Woo into a video game?

Keith Beu – Senior Character Artist:

The whole process was made quite a bit easier because John Woo was willing to have his whole body scanned. The character didn't have any major costume requirements, so we were able to use exactly what he was wearing during the scanning process to outfit him.



We used the scan data to model our in-game geometry on, and as the starting point for all of his textures. This involved taking our template head and body in-game meshes, which all of our characters started from, and basically shrink-wrapping them around the high-res scan mesh through a variety of means, such as lattice deformers and individual vert tweaks. After the modelling was completed, his mesh was skinned and weighted to his skeleton.



Diffuse maps were generated by using the Render to Texture feature in Max, projecting the texture information which came along with the scan data onto the in-game mesh. For the normal maps, we did a small amount of clean up to the scan data in ZBrush, where we also added a few little extra details here and there. These refined high-res meshes were then brought into Max where we again used the Render to Texture tool to generate the normal maps with the in-game geometry.

All in all, the character asset came together very quickly, and in some ways was easier than many of the other characters which were made entirely from scratch, but it should be pointed

out that, in the end, he was really brought to life by our animators who meticulously studied John Woo's facial expressions from film footage and photographs in order to make him as convincing as he is in the game.

What were the most demanding artistic challenges in developing this game?

Stephan Martiniere - Visual Design Director:

From a visual and technical standpoint, we raised the bar as high as we could. The hopes and promises from the Unreal Engine, as well as the XBOX 360, were high. I would say that our biggest challenge was to maintain the artistic and technical integrity as we gradually discovered the limitations of the engine and the XBOX. We had to shift gears and adapt constantly; we had to rebuild levels, downsize textures to work with limited amounts of lights; the list goes on. In a way, this is very similar to what happened during the last technology leap several years back. Every one learns on the fly and adapts in the process. What is learned will make the next generation of games better.

What inspiration and references were used when designing the environments?

Stephan Martiniere – Visual Design Director:

The very first step was to gather as much reference material as we could for Hong Kong and Chicago, where the story takes place. Both cities have obvious landmarks and familiar places, but I was also interested in finding compelling and unusual places. The player would walk in and say, "Wow! I had no idea such a place existed." We wanted these environments to emotionally connect with the viewer - to create surprise, awe, doubt and fear. The gameplay and massive destruction elements were also very important. These places had to be exciting and fun to play in. Because of these requirements, many of the references became spring boards for much larger and intricate concepts, but no matter how large and complex, it was important that all these places always feel believable. Another challenge was to give each place its own unique mood and colour signature. I felt that, as the drama unfolded and built up, these distinctive artistic ingredients would help pace the story and enhance its emotional content. I often look at movies for inspiration. John Woo's movie,





"Hard Boiled", was an obvious choice, especially for the tea house and the marketplace levels, but many of the other locations in the game have a more complex and exotic feel, and so exploring different palettes and moods made sense. Black Rain, from Ridley Scott, is a great example of how you can artistically infuse drama and emotion into a familiar city. The photography is remarkable; the locations are interesting; the light, colours and composition inspiring. These movies, and many others, as well as tons of photographs and numerous trips to the bookstore, have been our constant sustenance for inspiration.

What next gen features do you feel have been utilised to good effect with regards to the console development, and how do you think these have enhanced the gameplay?

Neill Glancy - Lead Game Designer:

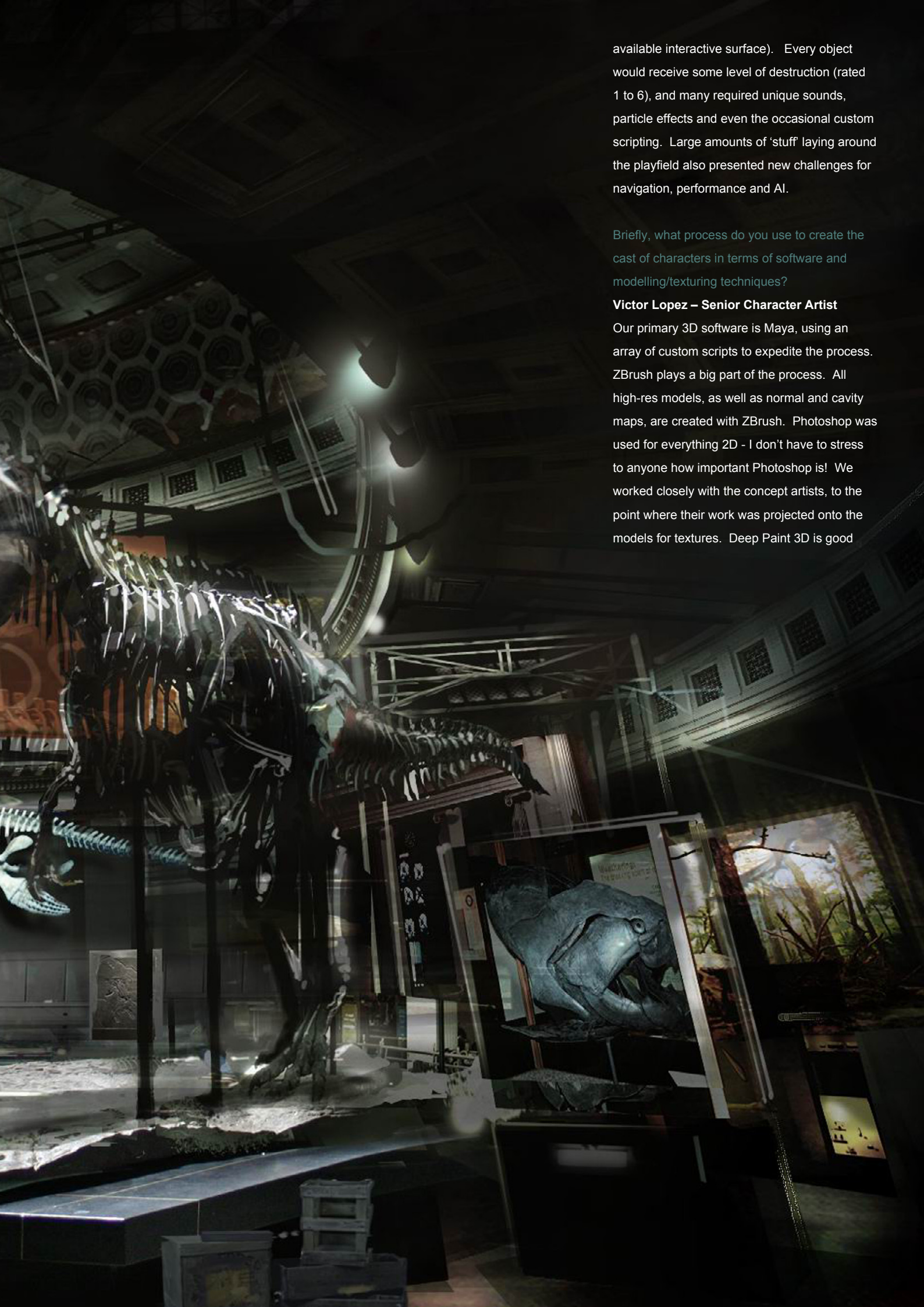
Without a shadow of a doubt, in the case of Stranglehold, I would say the "Massive D" physics simulation. The sheer volume of fragments and parts in the world would have been impossible to compute on previous systems. It also leads to interesting emergent gameplay, as a player can break a table, or block a route that AI might use, so the AI system needs to be smart enough to understand that the room has changed, and change its tactics to get at the player. In Stranglehold, Massive D isn't just something that's pretty to look at, it can also be used as a weapon or a tool. For example, the player could shoot over a statue creating cover for themselves, an obstacle for AI or crushing enemies.

How does destructible scenery add to the job of the modellers and texture artists?

Jason Kaehler – Art Director:

Making the world destructible was a significant effort for both art and engineering. Each asset had to be built, broken, then put back together for the player to destroy. We developed a significant suite of technologies that gave our artists and designers an enormous amount of freedom to determine "how" something would break. For large, complicated objects (like the T-rex dinosaur), we would go through many, many iterations to provide both the visual satisfaction you would expect, as well as the gameplay feature (like running along a newly





available interactive surface). Every object would receive some level of destruction (rated 1 to 6), and many required unique sounds, particle effects and even the occasional custom scripting. Large amounts of 'stuff' laying around the playfield also presented new challenges for navigation, performance and AI.

Briefly, what process do you use to create the cast of characters in terms of software and modelling/texturing techniques?

Victor Lopez – Senior Character Artist

Our primary 3D software is Maya, using an array of custom scripts to expedite the process. ZBrush plays a big part of the process. All high-res models, as well as normal and cavity maps, are created with ZBrush. Photoshop was used for everything 2D - I don't have to stress to anyone how important Photoshop is! We worked closely with the concept artists, to the point where their work was projected onto the models for textures. Deep Paint 3D is good

at this, but we wrote a few scripts in Maya to make the process more efficient by not having to switch programs. We then took those models into ZBrush (with the texture), and in combination with high level sculpting we used the ZMapper plug-in for faster and more detailed results.



BLACKSITE

Blacksite appears to encapsulate the mechanics of the modern day squad-based shooter, along with the staple sci-fi elements of an alien invasion. What did you do to try and make this game stand apart from any that may draw comparisons?

Jim Stiefelmaier – Design Director:

I think our unique story elements and environments help to position Blacksite away from other shooters in an interesting way. Many shooters feature aliens, but usually you are on a green planet with blue air, in some kind of armour. Likewise, many shooters feature modern military combat, but are set in a foreign country against terrorists, which is getting really tired. Blacksite has a wonderful grounded modern military feel, but set in your own back yard, and then we add aliens! The juxtaposition of a 60 foot alien in a suburban cul-de-sac tearing into a Humvee, is pretty fun to experience. The grounded nature of our environments compliments the aliens, because a familiar reality can be made so unreal at times.

Can you summarise the general pipeline during a game development cycle from initial ideas through to getting it on the shelves?

Jim Stiefelmaier – Design Director:

Wow, that's a tough question, as pipelines on next gen games are wicked, especially considering the amount of content we had to make! We start in pre-production, taking the story outline and roughing out the gameplay ecology (environment + non-player characters + vehicles + weapons + player package). After that, the art department begins the concept phase. After we iterate on paper, art begins the beautiful corners (a series of small levels - one for each environment, but with full production values), whilst design begins geometric proxies (think orange-textured block worlds). After art learns from the beautiful corner, and design learns from the geo proxies, we get with tech and reality check our streaming zones and our draw distances. Then we iterate again. Once



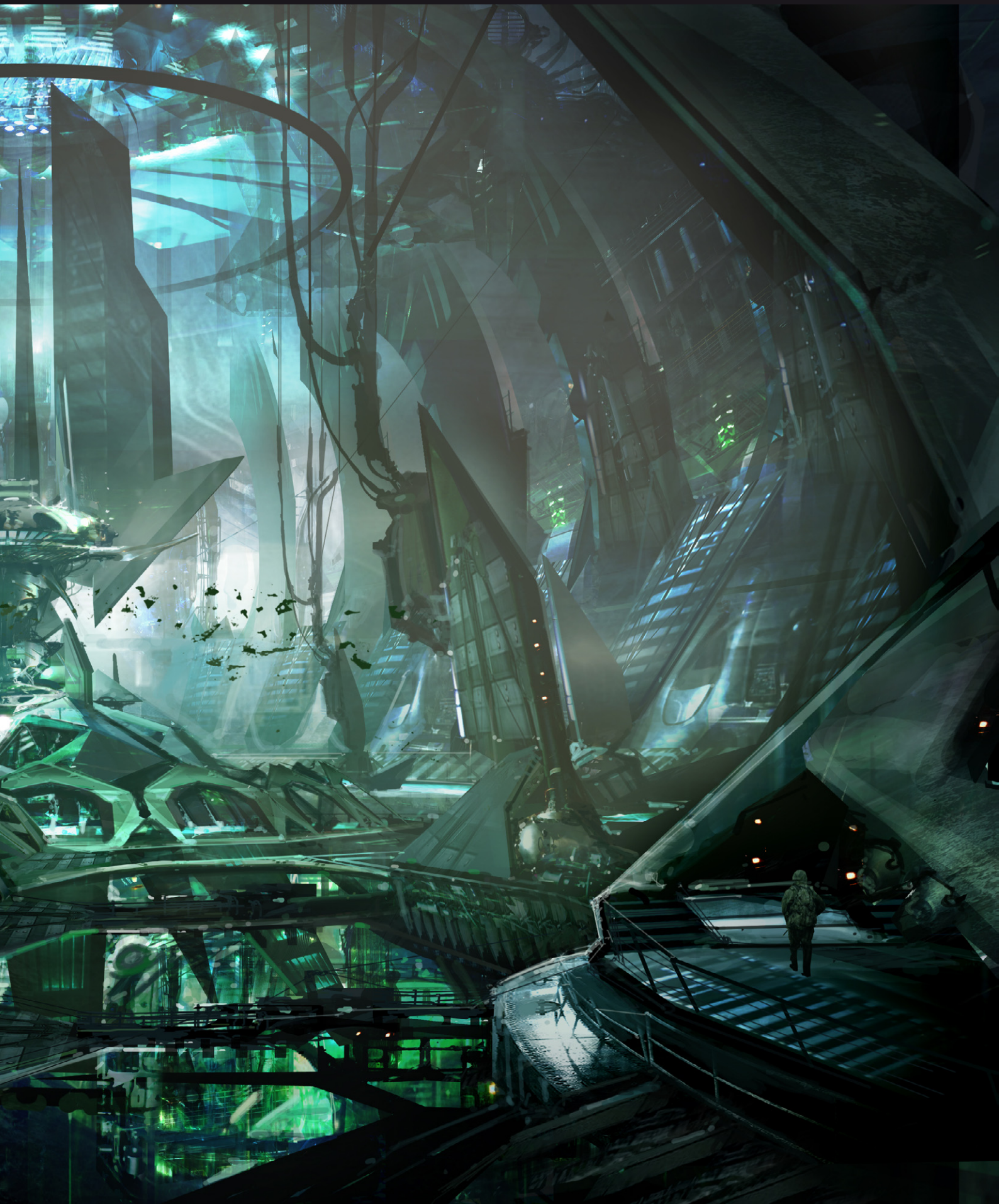
we have playable, realistic geo proxies, and the beautiful corners are gorgeous, we create out-sourcing packages and begin our out-sourcing phase. After weeks of integrating content from our partners, we work in a pod structure (a pod is a group of artists, designers and sound designers responsible for a specific level) to polish. As we iterate, we aggressively focus test our game with consumers and make changes, time permitting. Then, as the final date gets closer, producers really get aggressive, cutting away any fat from the project, and begin to waive non-critical issues as we enter final bug fixing stages. Then one day you wake up, and realise you have submitted and you're done! Projects tend to taper off, rolling off people as quickly as we can.

How do you ensure the creatures in the game appear both dynamic and fantastic, but at the same time are convincing and believable?

Pete Franco – Art Director:

To ensure a sense of realism in our aliens, we would take themes we're all familiar with in nature and twist them. With the Drudge, for example, we took the standard mammal pelvis but gave him one at the top of his spine and one at the bottom, allowing him to alternate which pelvis was in front at any one time. This resulted in some very bizarre walk cycles and made something very other-worldly out of something very standard.







Was the art team broken up into distinct categories when creating the environments, characters etc., or did everyone contribute to various sections?

Pete Franco – Art Director:

Though we fostered a lot of cross-pollination across the team for creative ideas, for the most part, the art team was divided along four major axes: concept art, environment art, character art and cinematics. The fifth branch was visual FX, which supported all of the above departments with their particles and special effects needs.

Briefly, how have the next gen consoles changed the way games are made now from an artistic point of view?

Pete Franco – Art Director:

The biggest thing that has changed is the amount of time that it takes to create next gen art. Between the higher resolution textures and additional materials, it can take up to 4 times as long to create an asset. This results in either a lot more staffing or a lot of out-sourcing, requiring a lot more internal art management. This means that artists that were used to just

making art all day now have their days split between making art and managing external resources. Similarly, now more than ever, concept art is an important part of next gen art production. Because it takes more time and money to create the next gen art, you really need to make sure you have your vision and ideas in place so you don't experiment in production, but rather get the experimentation done in pre-production.

What are the typical poly counts for characters these days, and are they commonly detailed in ZBrush before being exported?

Pete Franco – Art Director:

Our "hero" models were typically 10,000 - 20,000 polys for the in-game models, and were all detailed with either ZBrush or Mudbox. Typically, half of the polys would go to the body and the other half to the head. Somewhere in there we'd reserve polygons for our sub-mesh pieces, such as the visors of the Reborn, or





the carapace of the Drudges. This way we are able to create many varieties of these pieces and swap them out in-game, giving us a vast diversity of alien ecology. And also, this would allow the pieces to be blown off in combat, revealing the Reborn face underneath, or the guts of the Drudges' bulbous head.

Can you describe the different texturing techniques used nowadays, compared to the era when geometry was unwrapped and

squeezed onto a template and often painted by hand?

Pete Franco – Art Director:

For the most part, you still really need to take care in unwrapping and optimising your texture sheets. Though you have lots more system memory on the new consoles, you also have a lot more texture maps to fit into that memory, such as normal maps, occlusion maps, specular maps, and so on. So unfortunately, smart unwrapping is still something you can't get

around, but there are a lot of valuable tools out there to drastically simplify the process versus four or five years ago, such as UVW Normal Unwrap and Pelt mapping in 3d Studio Max. Plus, you really want to make sure you weld your verts optimally, as in previous gen, to ensure the normals and specular highlights roll over the surface contiguously.

Also, though you would ideally want every prop in the game to be meticulously crafted with the kind of modelling detail you'd get from programs like ZBrush, there often isn't the time or budget for that kind of detail across every single prop. As a result, a lot of normal map generation is also done in Photoshop, using programs that pull out normal map information from diffuse maps, or mixing and matching from a good library of normal maps.

MIDWAY GAMES

For more information please visit:
<http://www.midway.com>

Interview by: Richard Tilbury



Eva Wild

Female Characters Creation

Introduction:

The 'Eva Wild Series' – Our aim in this series is to provide comprehensive lessons to produce a complete fully rigged, textured and anatomically correct female character. This series fits well into 3 DVDs with 3 separate professional 3ds Max instructors taking you through each if their specialties in very detailed step by step processes making this training suitable for artists of all levels.



Part 1 - Modelling:

- Complete step by step modelling of the Eva Wild character.
- Teaches the importance of studying human anatomy.
- Provides clear diagrams showing muscle flow and bone structure.
- 14 hours of comprehensive training.
- Suitable for artist of all levels.



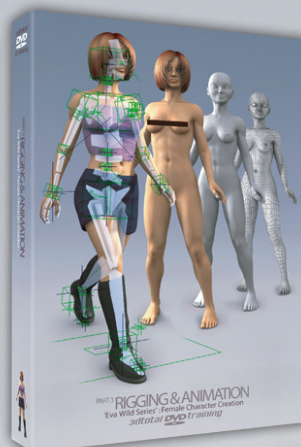
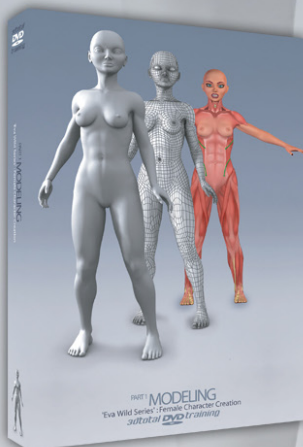
Part 2 - Texturing, Mapping & Clothing:

- Complete step by step texturing process of the Eva Wild character.
- Modelling and Texturing of Eva Wild garments.
- Lighting the character.
- 4 hours and 47 mins of comprehensive training.
- Suitable for artist of all levels.



Part 3 - Rigging & Animation

- Complete step by step of setting up a fully animatable rig for the Eva Wild character.
- Creating a walk Cycle.
- Creating a simple face morph.
- 7 hours and 43 mins of comprehensive training.
- Suitable for artist of all levels.



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The Vegan Zombie

TOFU

TM



Cooking up Tofu:

The Making of *Zombie Dearest*

By Nickolas Stevens...

"WHAT I LOVE MOST ABOUT ANIMATION IS THAT IT'S A TEAM SPORT, AND EVERYTHING WE DO IS ABOUT PURE IMAGINATION." - JEFFREY KATZENBERG

The Vegan Zombie TOFU

COOKING UP TOFU: THE MAKING OF ZOMBIE DEAREST

As I look back on the production of Tofu, I can't help but think how much imagination was put into bringing these great characters to life.

Stemmed from the imagination and passion of William Vaughan, our entire team was inspired

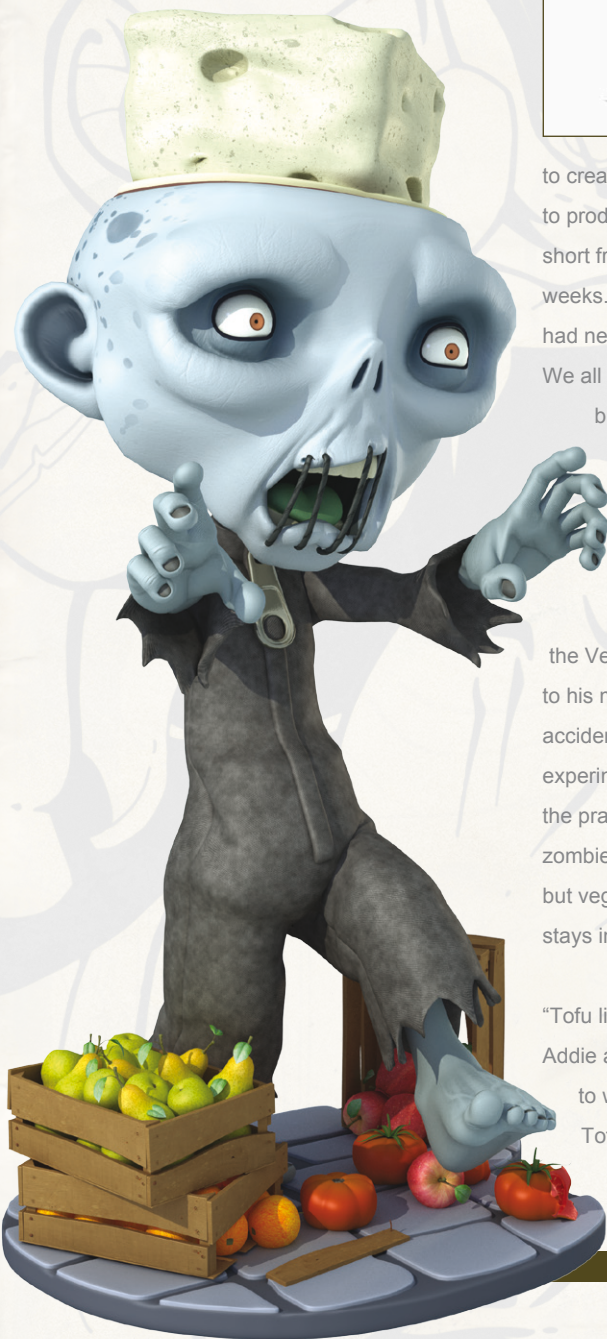


to create something truly unique. Our goal was to produce, nearly from scratch, a fully animated short from beginning to end in ten and half weeks. It was an eye opener to many of us who had never worked on an animated film before. We all knew we had a lot of work ahead of us, but we also knew that we had a talented group of artists and that we could bring William's vision to life...

SO WHO IS TOFU?

"In a world where zombies exist, Tofu the Vegan Zombie is the friendly alternative to his meat-eating brethren. He was created accidentally, when his brain was lost during an experiment and replaced with a block of tofu by the prankster, Lab Monkey #5. When the little zombie boy woke up, he no longer craved meat but veggies and grains. As long as the block stays in his head he remains that way.

"Tofu lives with the Professor, his daughter Addie and Lab Monkey #5. Though he is able to walk among both humans and zombies, Tofu is never fully trusted or accepted by either group," said creator, William Vaughan.



ZOMBIE DEAREST

When the idea of making Tofu into an animated short came about, William didn't want to simply recount 'the birth of Tofu' story mentioned above. The story had recently been featured in a teaser comic that was created for the New York Toy Fair. Knowing there was much more depth to the story of Tofu, William and Tofu director, Lee Stringer, decided to skip the pilot episode and jump into an episode, called "Zombie Dearest".



"The story focuses around Professor Vost's wife. Vost has been keeping a deep, dark secret from his daughter, Addie, about her deceased mother, Fiona. Unfortunately, a curious Tofu lets the cat out of the bag. Will Addie be cool with what happened to mom?" summed up William.

For those who don't already know the details behind the birth of Tofu, a song was written

telling the story and incorporated into the opening sequence. "We didn't want to leave anyone in the dark on who this little guy was and the theme song was a great way to get everyone up to speed quickly before the show started," explained Lee Stringer.

The script was soon finalised and handed over to an amazing artist, Alexandre Assumpcao, who converted the script into storyboards.

CHARACTER AND ENVIRONMENT DESIGN

With only a few short weeks before production began, William brought on concept artist Jason Pichon. Jason was able to take William's existing characters, Tofu and Lab Monkey #5, and translate their style into the other characters, such as Addie and Fiona.

Jason explained the process with the following: "William has a distinct style that is recognisable among his fan base. The challenge for me was to get into William's head and generate designs that fit within his world, as if he had designed them himself. Addie was fun to work on, in that I not only had the opportunity to design her, but to also model and texture her.



"Fiona presented her own challenges as she had to not only be a zombie, but she had to also be appealing and have that 'every mom' sort of look - something familiar and easy to connect with. Each design presented its own challenges. Some hit and some didn't, but ultimately it was a matter of making them feel as if they were born from the same mind and drawn from the same hand."

Derek Smith took on the enormous challenge of designing the professor's lab. Lee Stringer and his wife, Karen Davis, designed the interior and exterior of the Vost home.

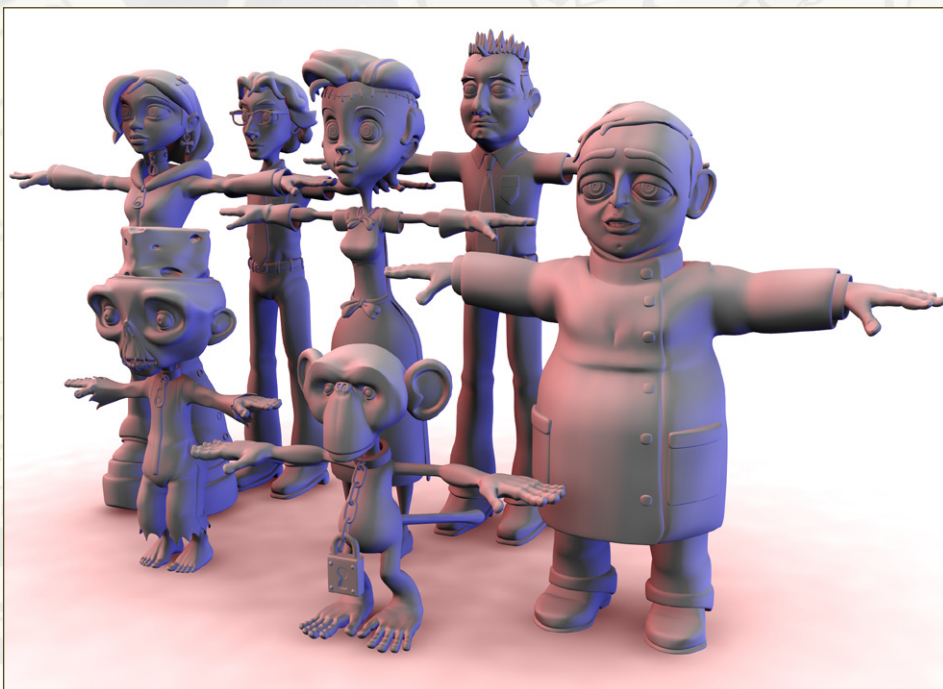
VOICES BEHIND THE CAST

"Finding the right voice for the characters was a major concern of both myself and Lee. We were fortunate to get our first pick for the entire cast. Addie's character was heavily influenced by Ellen Muth's role in 'Dead Like Me'. When she signed up to voice Addie, everyone was extremely excited," explained William.

Playing the voice of Professor Vost and Lab Monkey #5 was veteran voice actor Billy West. West is the man of a million voices and is best known for his voice work on shows like 'Ren and Stimpy' and 'Futurama'. "When we first met with

Billy West, we discovered that he was a vegan," commented Stringer. "It became obvious that he was excited about the show concept and that he wanted in."

April Warren, a CG artist who has worked at Flash Filmworks and Lightstorm, was brought on to play Fiona. Bridget Crowley was brought on to play the voice of Tofu. In her debut performance, Bridget's contributions gave the character a childlike innocence needed for the role. "I was so excited when I found out that I got the role of Tofu," remarked Bridget. "Getting to work with Billy West and Ellen Muth was an experience I'll never forget."



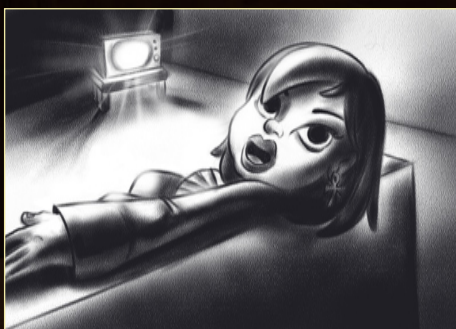
Tyler Delange and I played the role of the two missionaries, Nick and Tyler. It was an awesome and daunting experience, stepping into the recording booth. As I read my lines it became quickly apparent just how difficult voice acting can be, and I was playing myself. I gained a lot of respect for the work actors like Billy and Ellen do in my short time inside the recording booth; it really takes a special talent to pull off these amazing performances.

THE TEAM OF ARTISTS

The Digital Animation and Visual Effects School (DAVE School) at Universal Studios Florida is a training facility that I and many other future industry artists attend to learn and refine skills needed for the CG industry. It is an intense program that teaches students all the skills they will need to create a short, like "Tofu". William and Lee, two of the instructors at the school, pitched the idea to school founder, Jeff Sheetz, who promptly gave the green light to the project.

With only nine months of training, we were suddenly hurtled into the hectic world of production. This is really the reason I came to the DAVE School: to work in a real studio environment. We worked with industry professionals who had been there before, who could help us find solutions. We had an enormous amount of work and a tight schedule of ten and a half weeks, but we knew we could do it. We were all assigned specific tasks based on our strengths, and as the production progressed we often shifted to other areas and teams that needed attention. By the end I had touched nearly every area of the production, from modelling to rigging and animation, to lighting and compositing. Looking back on it, I am quite amazed at how much I learned and how much I was able to contribute to the project.

I was only a small part of a large team. It took dedication and commitment from everyone to reach our goals and deadlines. "Teamwork was absolutely essential on the project. Any setbacks we had on the project usually consisted of a lack of communication between teammates," said Tyler Delange. He continued, "Overall everyone worked well with one another and there were only a few difficulties in the making."





Gabe Cassata remarked, "Working with William Vaughan on Tofu was really a fantastic experience... as it is working on anything that comes from his brain. Any opportunity to be a part of bringing one of William's creations to life is truly special."

The film also featured a special one minute intro. "The idea behind the intro is that Lab Monkey #5 is putting on a puppet show for Tofu telling him the story of how he was created," said William.

The intro was created by a small team of artists working in Reno, lead by Alejandro Parrilla. The intro had a very quick turnaround of only one week. "Making a kid's puppet show simulation was really amusing, and all the artists involved were excited about taking on the hard task of animating a one-minute-sequence within a week," Alejandro commented.

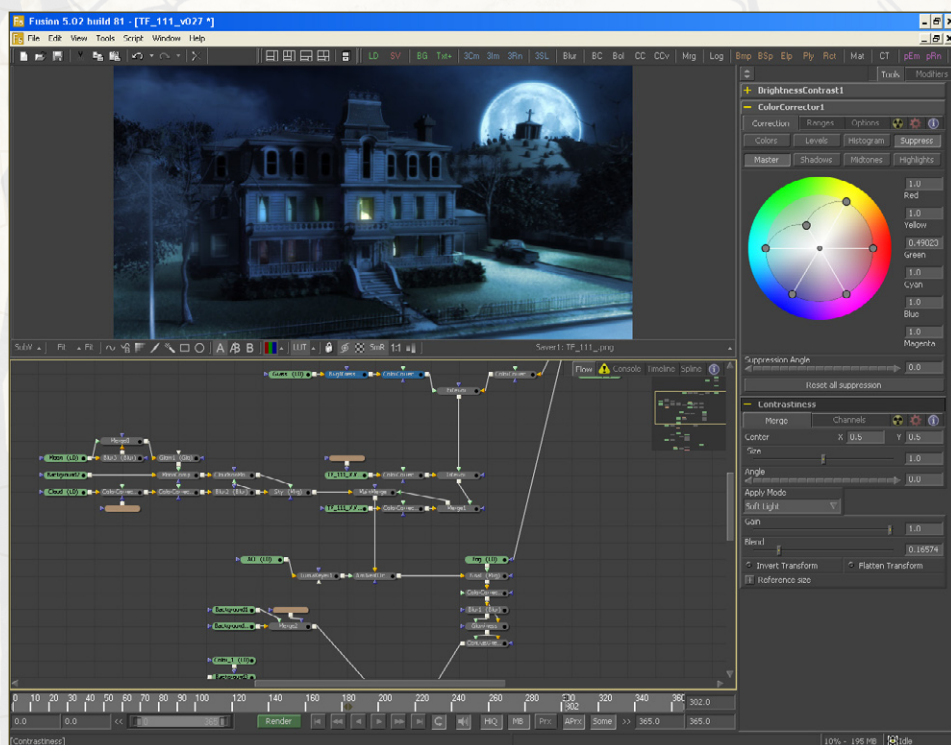
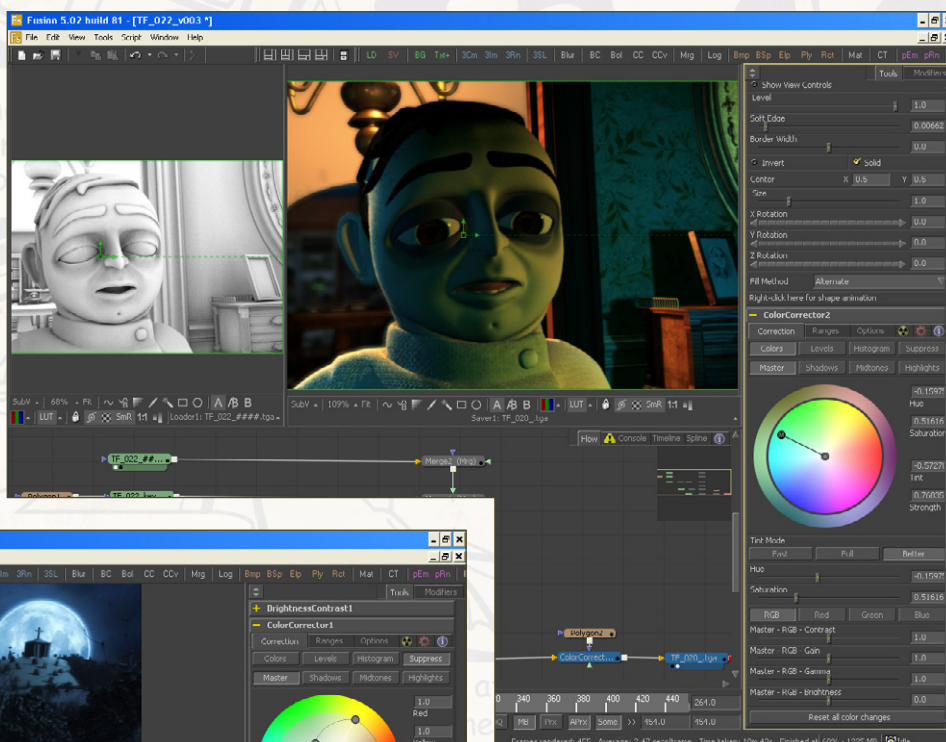
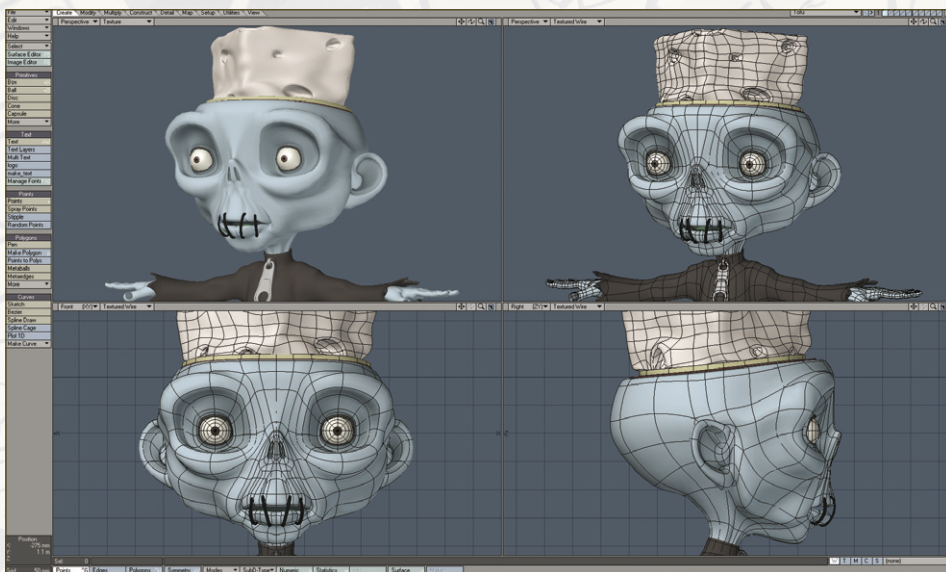


William and Lee turned to KC Ladnier, President and Lead Sound Designer at Sound O Rama to create the audio track for the short. Ladnier and his team produced a custom score that brought the movie to a new level.

THE TOOLS

Zombie Dearest took advantage of the latest versions of Newtek's LightWave 3D and Eyeon's Digital Fusion. Lightwave was used to create all the 3D assets, as well as to fully animate the film. Fusion was used to pull all the rendered elements together into a final polished piece. Newtek's Speed Edit was used to edit the animatic and Adobe Premiere was used to edit the final movie together.

We took advantage of the new render enhancements found in LightWave v9, allowing us to push enormous scenes through the pipeline. "With LightWave's much used and highly praised render engine, we were able to pull off over 120 finished shots in just a few



weeks. With a limited render farm we didn't have to compromise on quality; each shot had full radiosity and depth of field." Lee Stringer explained.

The school recently switched to Fusion from After Effects for its compositing class and final projects. "We've found the students are more excited about compositing work and seem to pick it up much quicker since we made the switch to Fusion", comments Sam Mendoza, Instructor.

THE RESPONSE

"I've wanted to create an animated movie about Tofu the Vegan Zombie for quite some time, and thanks to the amazing team involved, we have something that we are very proud of." commented William.

We have had an amazing response to the film in a short time. Within the first two weeks, *Zombie Dearest* had received over twenty honours on You Tube and was #1 in the Film and Animation category. In less than three weeks, it had been viewed more than fifty-thousand times with more views daily. If you haven't seen it yet visit www.tofutheveganzombie.com

Several of my teammates on the project have already made their way into the industry after working on *Zombie Dearest*. For example, Gabe Cassata is currently working with me here at Branit VFX, Kevin Hand and Martin Stankard have moved to California to work for Radical 3D and Eden respectively, John Hirt has gone North to work for Balance Studios, and Tyler Delange to Bowen Studios in Salt Lake City.



ABOUT NICKOLAS STEVENS

Visual Effects Artist and Animator, Nickolas Stevens, has been involved in the world of visual effects since 2005. Nick started his voyage into the effects world by producing and editing several short films while attending college at Utah State University. His love for film quickly developed into a love of effects and animation. Nick attended and graduated from the Digital Animation and Visual Effects School. Nick currently resides in America's Heartland, Kansas City, working for Branit VFX. His work has been featured on hit television shows, such as "Moonlight", and the popular animated short, "Tofu the Vegan Zombie: Zombie Dearest". You can check out Nick's work at www.nickolasstevens.com or contact him at stevnick@gmail.com.

COOKING UP TOFU: THE MAKING OF ZOMBIE DEAREST

For more information please visit:

www.tofutheveganzombie.com

Or contact:

william@tofutheveganzombie.com

Article written by: Nickolas Stevens



The Vegan Zombie

TOFU

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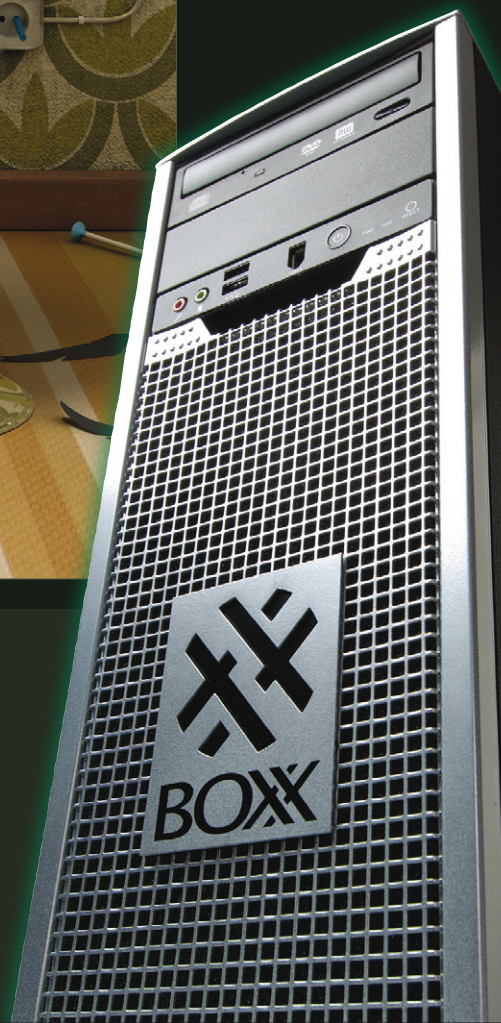
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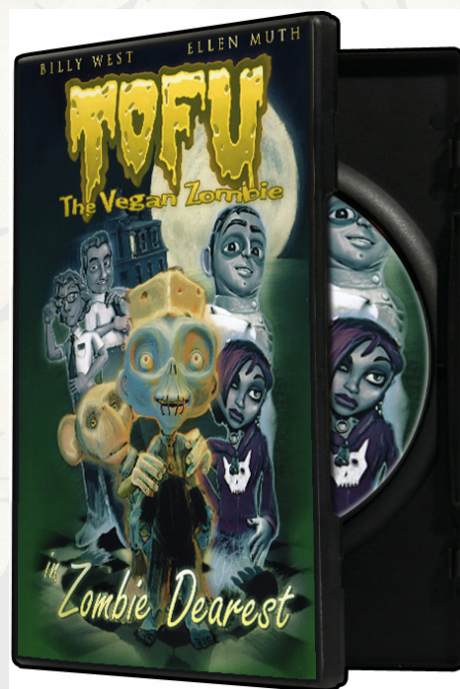
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Tofu the Vegan Zombie: Zombie Dearest is the latest DVD from the mind of William Vaughan.

Things just keep on going wrong in Zombie Dearest, the first adventure of:

The Vegan Zombie



Join Tofu, Monkey, Addie and some new friends as they discover what Professor Vost has been working on in his lab...

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Tip: Check out Tofu's website to find the ANSWER:

<http://www.tofutheveganzombie.com/about>

Email your answers to: lynette@zoopublishing.com

Please include 'Tofu the Vegan Zombie Competition' in the subject line of your email. Please include your name and full shipping address in your email. All entries received by 31st December 2007 will be entered into the prize draw. The thirteen winners will be notified by email.

Rules: Zoo Publishing's decision is final. There are no cash alternatives. No other correspondence will be entered into. Any entry that is late, illegible, incomplete or otherwise does not comply with the rules may be deemed invalid at the sole discretion of Zoo Publishing. Your details will be held on record by Zoo Publishing and will only be passed on to the makers of 'Tofu The Vegan Zombie' for the sole purpose of your prize to be distributed to you. Your information will not be passed on to any other third parties.





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Model by: Phillip Obretenov



Image By: Zoltan Korcsok

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"IN THE END, HOWEVER, IT
WAS THE FILM'S SUBJECT,
RATHER THAN ITS
EXECUTION, THAT PROVED
MOST CHALLENGING FOR
THE SHILO TEAM..."

Shilo Directs Passion Piece With and For Angels & Airwaves, Tom DeLonge

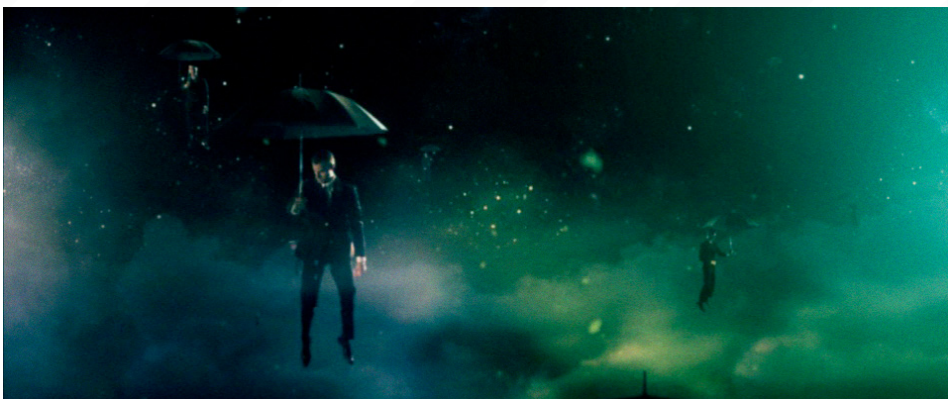
THE WAR INSIDE

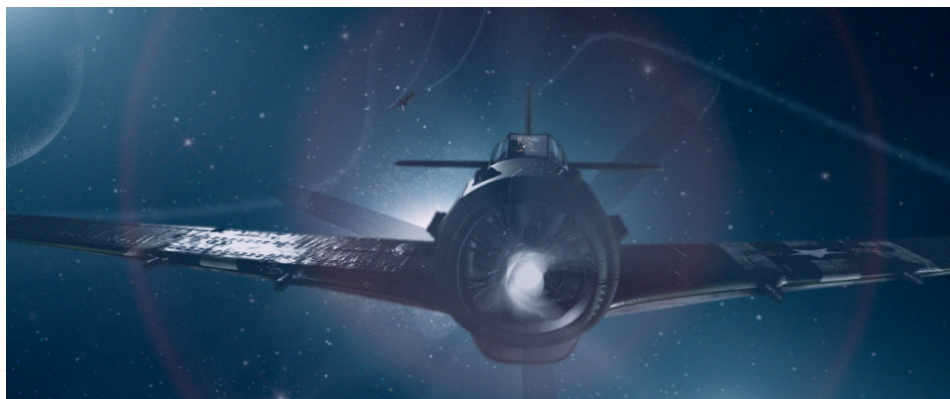
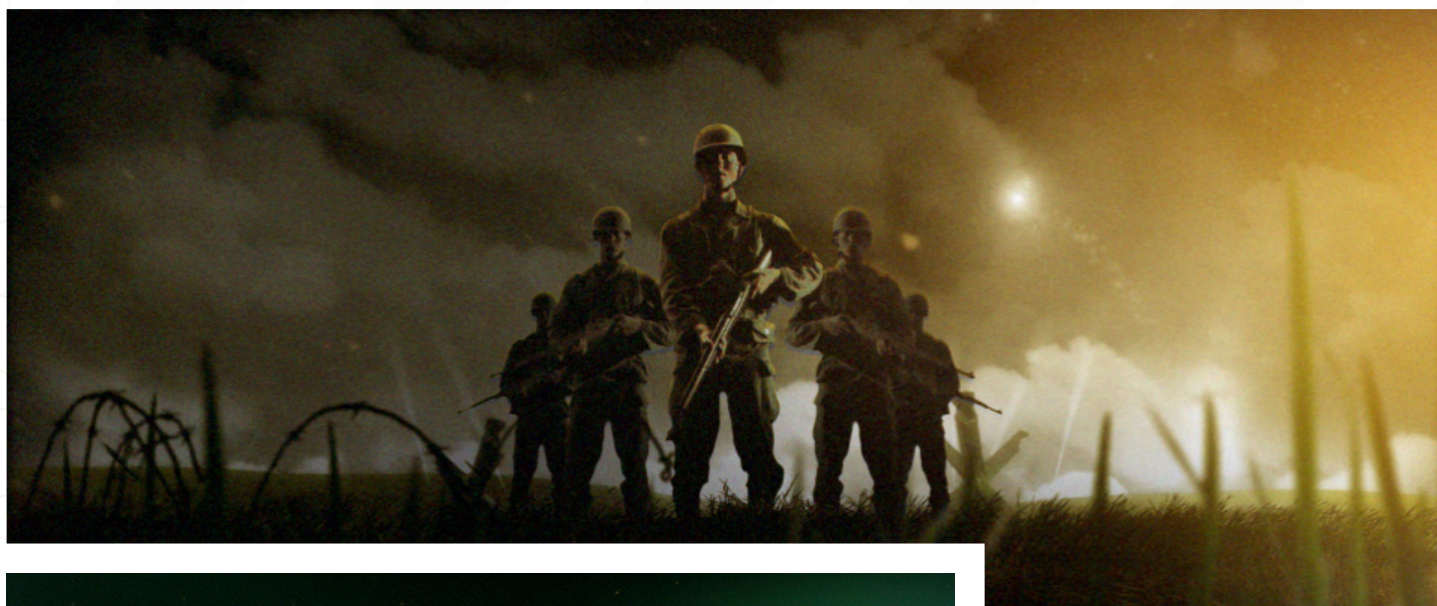
Shilo, the authors of
We Make It Good,
recently teamed
closely with musician
Tom DeLonge to direct
"The War", a striking
short film inspired and
backed by the Angels
& Airwaves song of
the same name...

The War Inside

Shilo, the authors of We Make It Good (www.wemakeitgood.com), recently teamed closely with musician Tom Delonge to direct "The War", a striking short film inspired and backed by the Angels & Airwaves song of the same name. Thanks in part to Delonge's admiration for the studio's work, the Shilo (www.shilo.tv) creative team was involved with this "passion piece" even as the original song was being written. Staying true to their technique of "design-infused storytelling," Shilo conceived, designed, directed, composited, and edited a short film of epic force and intensity.

Perhaps best-known as the lead vocalist/guitarist of the now "indefinitely hiatused" Blink-182, Delonge formed Angels & Airwaves in 2006, writing "The War" for the band's first album, "We Don't Need to Whisper". As Delonge was conceiving and writing the songs for the album, Shilo had the extraordinary opportunity to collaborate directly with the songwriter, creating storyboards and designs for short films through intimate conversations and





free associations. Shilo ended up directing the band's second music video, "Do It For Me", and designing the cover for their first album.

"When working with commercials, everything is tidy and nice at the end," says Andre Stringer, Creative Director at Shilo. "In contrast, 'The War' was all about creative freedom; free reign to make inferences and convey feelings without having to tell a literal, product-driven story. Both the plot and the schedule were open-ended, and we were able to really let the ideas flow."

"Tom gave us a lot of liberty, as well as a lot of his time and trust," says Creative Director Jose Gomez. "We'd just go and hang out with him and find out what was influencing him. In the end, we were able to direct something we are entirely passionate about."

In many ways, "The War" unfolds just like it sounds. Opening with an epigraph from Sally Kempton reading "It's hard to fight an enemy who has outposts in your head", the short film draws a clear and ominous connection between scenes of battle and the daily struggles of the individual mind.

A shot of DeLonge looking pensively into the camera moves smartly through the pupil of his left eye to a scene replete with conflict. Within

an entirely 3D world, dramatic images of World War II era warriors find a direct analogy with sharply dressed, combative, modern businessmen. As soldiers prepare for the battlefield, the professionals take up their places on a giant chessboard. As dirty, nervous fingers hold a twitching cigarette, a manicured hand drums with a sterling silver pen. There is no doubt that these two worlds, separated by time, space, and urgency, nonetheless bear striking similarities.

"The piece deals with visually representing the two sides of any person," says Tracy Chandler, Executive Producer at Shilo. "There are clear struggles between conformity and individuality. We were trying to create visual poetry with an intense layering of meaning; about politics, war, internal frustration; about the games we play in our own minds; and about simply being a pawn in society. There is a sense of the anxiety of choice; of having to choose between the two sides of oneself. The artistry ultimately stems from taking two contrary things and making a third something from their collision."



That sense of internal creative tension reaches its unsettling zenith in the concluding scene of “The War”, as two planes zig-zag across a fire-coloured sky en route to an inevitable collision.

“We shot six actors using 35mm, then replicated the characters as needed,” says Stringer of the process. “We performed a crazy amount of rigging and prop work as well, with miniature war sets and actors being dropped from great heights and against massive greenscreens. All the environments were a combination of digital matte paintings and 3D models, which we also created. This was a real mixed-media piece.”

Says Stringer:

“This was an introspective and thoughtful project for us. Not only was relating to Tom and his vision a refreshing challenge, “The War” tested how we juggle the artistry within our own imaginations. Sometimes what’s in your own head can be the most difficult thing to adequately express.”

ABOUT SHILO

Authors of the recently-published We Make It Good (www.wemakeitgood.com), Shilo’s daring band of artists, designers, and directors strive to push the boundaries of contemporary commercial production and strike a nerve in



THE WAR

A SHORT FILM BY SHILO

an ever-numbing audience. The company is distinguished by its passion for “design-infused storytelling.”

Shilo directs emotive and ground breaking visual experiences through its application of live-action, design, and animation all seamlessly combined with music and sound design. Creating an unmatched hybrid of storytelling and visual artistry, the Emmy® Award-winning bicoastal company has the capacity and experience to originate ideas and handle all aspects of production - from concept through completion - with superior creativity and production excellence.

Shilo has studios in New York and Del Mar, California. For more information or to request a reel, contact Tracy Chandler at 212-352-2044 or visit Shilo online at www.shilo.tv.

CREDITS FOR ‘THE WAR’

Design & Production Company: Shilo

Director: Shilo

Creative Directors: Andre Stringer & Jose Gomez

Design & Animation: Andre Stringer, Jose Gomez, Cassidy Gearhart, Curtis Doss, Marco Giampaolo

Lead 3D Design & Animation: Christopher Fung

3D Design & Animation: Cody Smith & Cedrick Gousse

Design Assistance: Dorian West & Kim Holm

Editor: Nathan Caswell

Director of Photography: Sean Kim

Line producer: Nicole Acacio

Executive Producer: Tracy Chandler

Producer: Jeremy Yaches

In collaboration with: Tom Delonge and Mark Eaton

THE WAR INSIDE

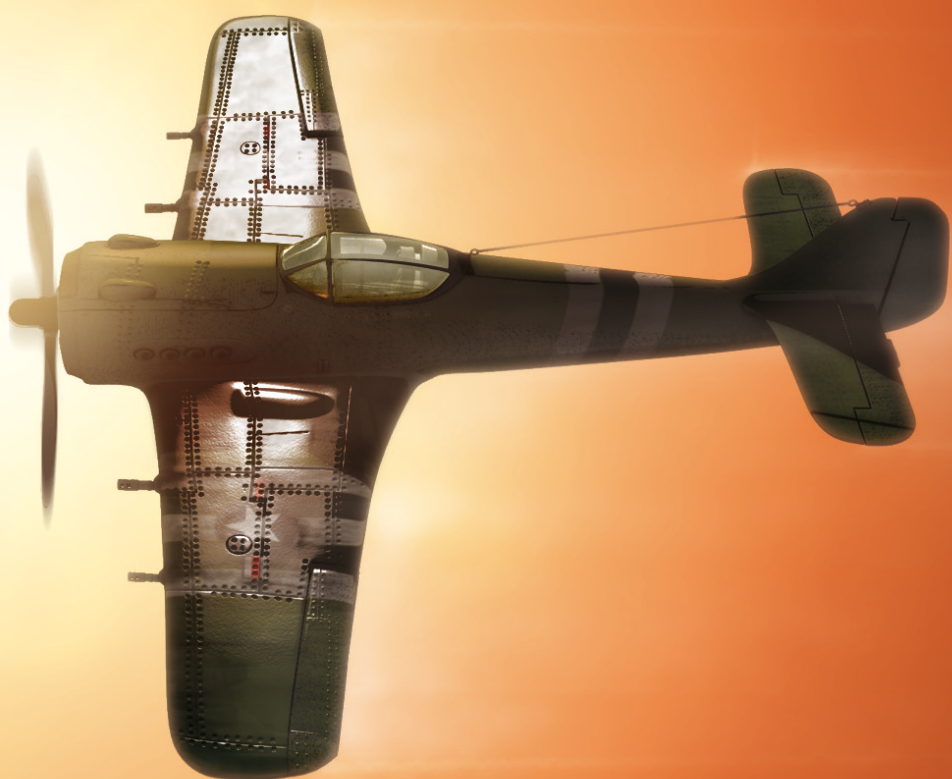
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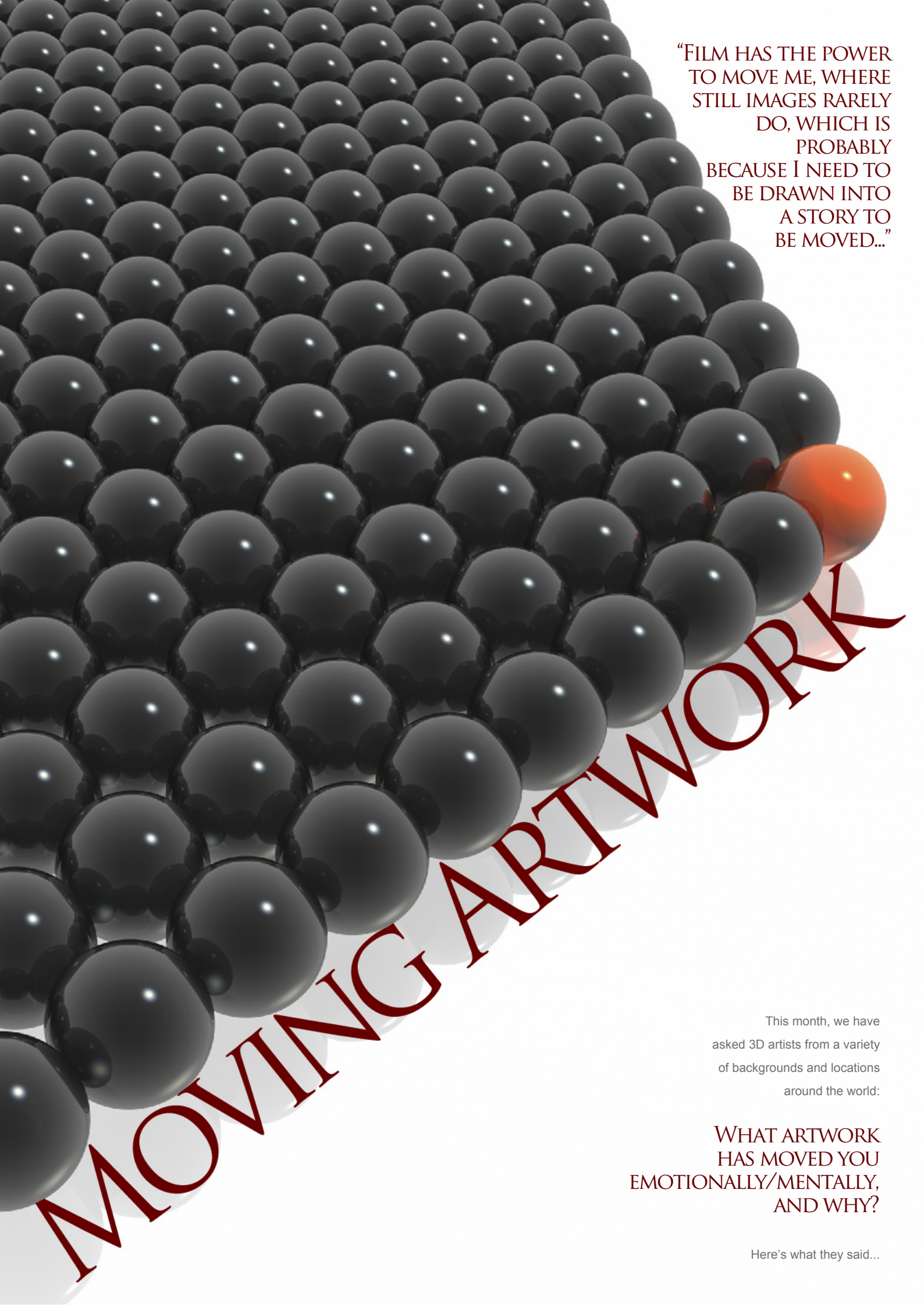
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“FILM HAS THE POWER
TO MOVE ME, WHERE
STILL IMAGES RARELY
DO, WHICH IS
PROBABLY
BECAUSE I NEED TO
BE DRAWN INTO
A STORY TO
BE MOVED...”

MOVING ARTWORK

This month, we have
asked 3D artists from a variety
of backgrounds and locations
around the world:

WHAT ARTWORK
HAS MOVED YOU
EMOTIONALLY/MENTALLY,
AND WHY?

Here's what they said...

MOVING ARTWORK

ANDERS LEJCZAK

Project Manager, Framfab, Malmö, Sweden

"The movie 'Silent Running'. It is an incredibly sad (a bit cheesy, though) sci-fi flick, not focusing on technology but on the stupidity and ignorance of man kind."

ANDRE KUTSCHERAUER

3D Designer, Studio Messlinger GmbH

Munich, Germany

"Many works from Leonardo da Vinci have moved me a lot. His imagination is just overwhelming."

ANNA CELAREK

Student, Vienna

"For example, the 'Toledo' painting by El Greco has something - some kind of soul inside, and you can almost feel the wind and the atmosphere when you look at that painting. Or a scene by Goya, where some revolutionists in white dresses are shot, and you see their scared faces - you can feel with them. I can't say what it is, but those pictures have a soul."

BOGDAN

"Constantin Brancusi's, 'The Bird'. The shape of this sculpture is simple, very smooth and fluid. It is one of my favourites."

CESAR ALEJANDRO MONTERO OROZCO

CG Artist & Freelancer, Digi-Guys

London (UK) and Mexico

"Leonardo da Vinci's work, and playing Beethoven at the piano. It's difficult to put into words something that excites you and touches



image by Anders Lejczak

you. Seeing/hearing their work gives me hope and unleashes my emotions."

DANA DORIAN

"Film has the power to move me, where still images rarely do, which is probably because I need to be drawn into a story to be moved."

DANIEL VIJOI

"I don't think there is only one artwork that moved me. I always was impressed by renaissance artists or surrealist ones - not only paintings but also sculpture. Actually, the artwork that moved me more was not a painting or CG artwork but a sculpture: 'Pieta' by Michelangelo. Why? It's so perfect; there is no way to remain the same after looking at that sculpture."

DAVID REVOY

"An image called 'Path To The Gothic Choir', by Raphael Lacoste, moved me a lot, because I can hear in this illustration the steps of the monks, the crackles of the dead wood, and a dark song in the background of 'Dead Can Dance', as I watch it."

ERIC PROVAN

3D Modeller, Sony Pictures Imageworks
LA, USA

"I consider films to be a type of 'artwork'. Films by guys like Hayao Miyazaki, Tim Burton, Terry Gilliam and Jean-Pierre Jeunet always effect me emotionally and mentally. They are insanely creative directors and always find a way to suck me into their little universes."

EUGENIO GARCIA

3D Illustrator & Animator, GrupoW

Saltillo, México

"Leonardo da Vinci's art, because he was so creative, and he was a pioneer of a lot of things. The other artist who inspires me is Van Gogh - all his history, and the fact that he never sold a painting when he was alive. Look his art now!"

GUSTAVO GROPP

General 3D Artist, Mamute Mídia

São Paulo, Brazil

"All Michelangelo's and Leonardo da Vinci's art touches me a lot for their levels of feelings and realism. I like them because they made their artworks in an era when technology was not there. They were real, talented human beings."

JURE ZAGORICNIK

Web Developer & 3D Freelancer, Hal

Interactive & 3D Grafika, Kamnik, Slovenia

"Hmmm... I can't think of any right now. Probably some of the Costa's ZBrush images..."

LIAM KEMP

"I generally respond more emotionally to photography than to paintings, simply because photographic images capture reality as it stands,



www.this-wonderful-life.com
copyright Liam Kemp

image by Liam Kemp

and reality to me is always more satisfying to view than any artistic representation. Though that doesn't mean I appreciate paintings any less."

MATT WESTRUP

"There are so many to choose from! If artwork can be extended to CG it would have to be first time we see a dinosaur in Jurassic Park. They were real! Suddenly, cinema had become a different viewing experience."



Image by Jure Zagoricnik

NEIL MACCORMACK

Freelance 3D Artist, Bearfootfilms

Geneva, Switzerland

"I love the work of Craig Mullins and Loic Zimmerman - everything they do inspires me!"

PEDRO MENDEZ

"I really love expressional faces... they really move me emotionally and mentally."

PETE SUSSI

"Again... a tough one. Moved is a loaded word. Let's use "inspired", instead. As I mentioned, Pixar and Superbowl graphics have always made me excited. However, there are many pieces that peak my interest. LOTR, Triplets of Belleville, King Kong, to name a few. Also, some of the best works I've seen have come from non-professionals - who do it for fun and are incredibly original."

PETER SANITRA

3D Artist, ImagesFX, Prague, Czech Republic

"CG concept sketches of new and unknown worlds and relations."

PETRA STEFANKOVA

"Svankmajer's films, or 'Dogville' by Danish director, Lars von Trier - they are some of the best, shining "brilliants" of contemporary



image by Pete Sussi



image by Michael Seidl



image by Nicholas Collings

cinematography. Movies in general are more powerful and have made greater impact in comparison to the other forms of visual art nowadays."

SEAN DUNDERDALE

"Anything by Marek Denko. His work continually raises the bar to aim for."

SORIN RADU

"Many works are so beautiful and move me mentally and emotionally, and make me wish to work myself and create beauty."

STEPAN (O)NE GRAKOV

"It's a hard question because there are so many great artworks that inspire me... I'm afraid I can't point just one or another."

SVEN RABE

3D Artist, Germany

"When I look back, I would say seeing Jurassic Park for the first time. It was incredible to see CG characters becoming that real - it really blew me away at that time. Thinking of traditional art I have to name the 'Mona Lisa' painting."

Standing in front of it in Paris was a very unique moment."

TIZIANO FIORITI

Freelance 3D Artist & Digital Matte Painter
Italy

"Maybe my first composition ('Japanese Portico') is the work I feel especially involved in. It is nothing particularly interesting, but it stimulated my wish to dream and it was a great encouragement to me, too. I realised that I had some chances."

TYCANE

3D Developer & Designer, NDG, Amsterdam

"Hmmm... To be honest, I have a hard time with empathy; I don't have it a lot, so I can't really say that any art work has really moved me. But I do see a lot of artwork I like, due to sheer skill or the artist, or it being just a very cool piece, but I will forget most that I see pretty quickly, unfortunately. Except for Norbert Fuchs's 'Shoalin Monk'. That, I feel, is one of my top five personal favourites."

VOJISLAV MILANOVIC

General 3D Artist, Animated Biomedical
Productions, Sydney, Australia

"All Van Gogh's pieces. From time to time there is CG artwork that can really inspire me to create."

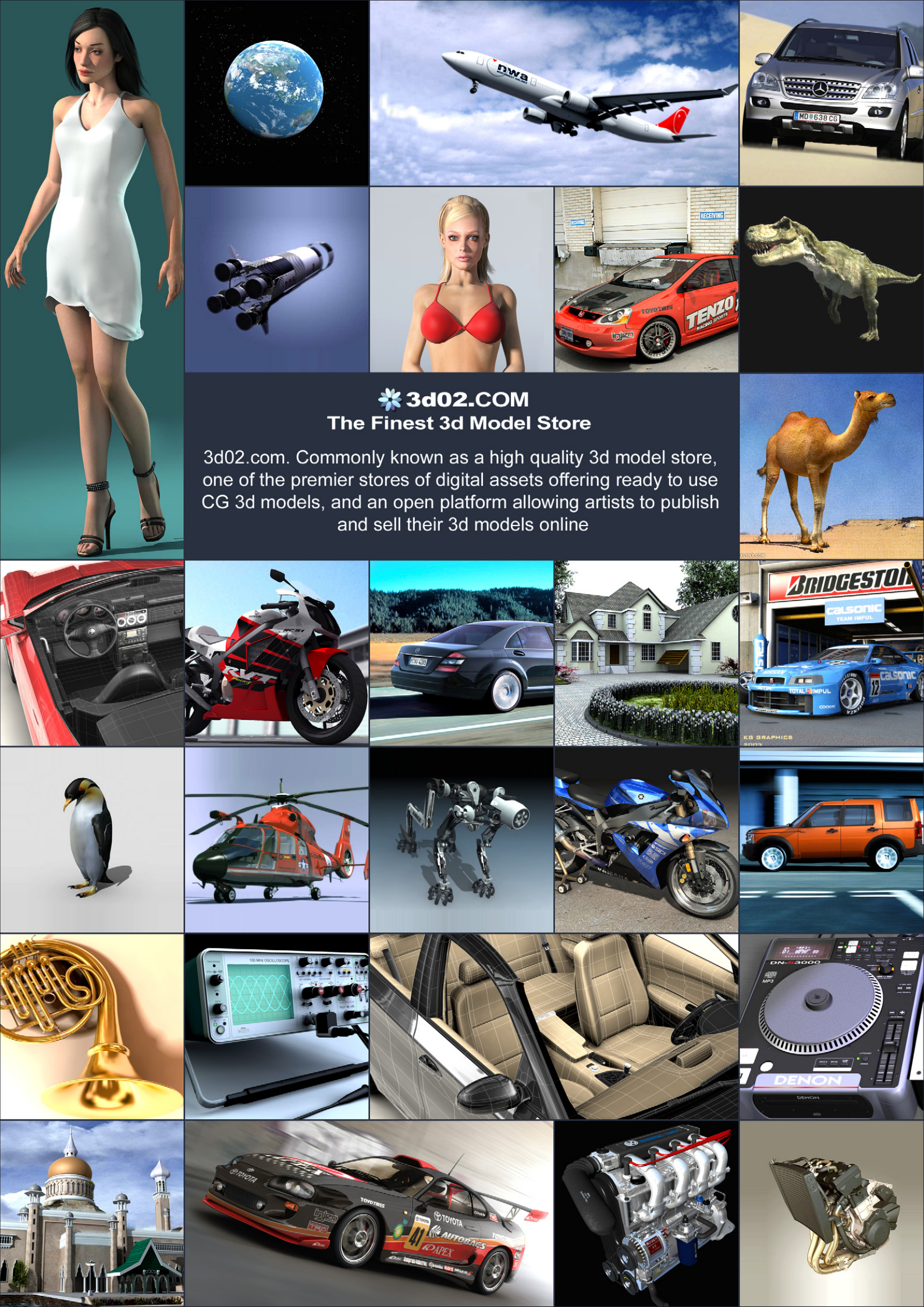
ZDENEK URBÁNEK

Student, Liberec City, Czech Republic

"I've seen a lot of very nice artwork, some of which from famous artists. Each work or project has evoked a few, or more, emotions... but I don't recall the exact artists."

In next month's issue, find out what a group of artists said when we asked them:

WHAT HAS HAD THE MOST EFFECT ON WHERE YOU ARE TODAY?



3d02.COM The Finest 3d Model Store

3d02.com. Commonly known as a high quality 3d model store, one of the premier stores of digital assets offering ready to use CG 3d models, and an open platform allowing artists to publish and sell their 3d models online

CALLERY



This month we feature:

Adrian Tiba

Krishnamurti M. Costa

Sergio Santos

Gunaars Miezis

Itay Greenberg

Bogdan Urdea

Sean Dunderdale

Juan I. Casale

Alfonso Escalona

André Cantarel



PORSCHE 911 996 TOP ART STUDIO SHOT

Bogdan Urdea

bogdan_urdea@yahoo.com

HARVESTER

Adrian Tiba

www.freewebs.com/adriantiba



THE MIRROR

Sergio Santos

www.sergio3d.com / www.youtube.com/sergiossn

sergio_ssn@yahoo.es

Be sure to follow the Making Of 'The Mirror' in
next month's issue of 3DCreative Magazine!



MARTY

Krishnamurti M. Costa

www.antropus.com/

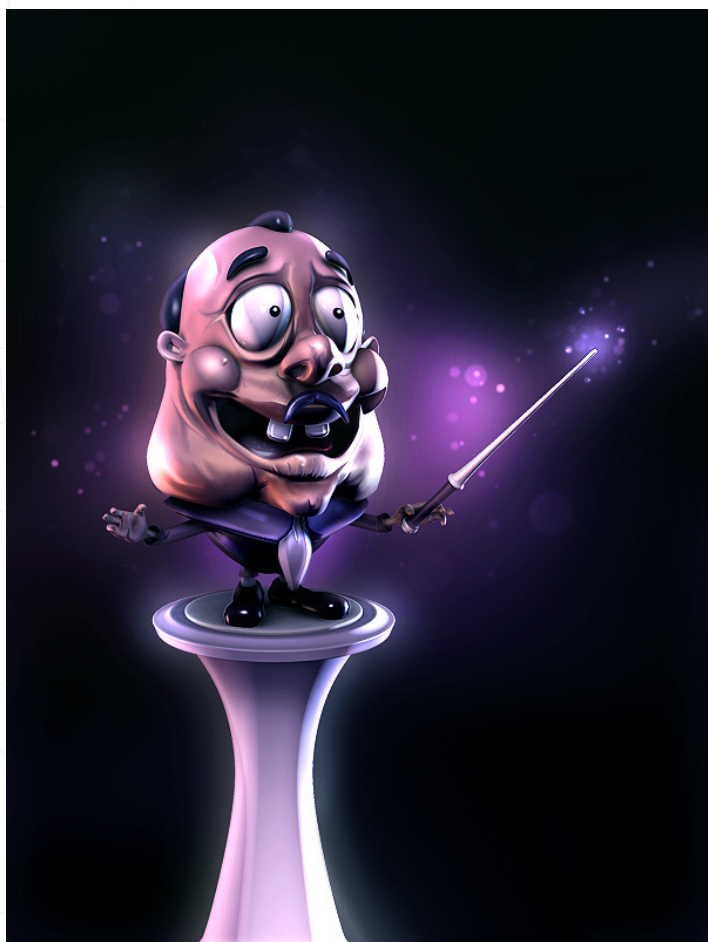
kris@antropus.com



THE RESTING SPOT

Itay Greenberg

itaygreen@gmail.com



CONDUCTOR

Gunaars Miezis

miezis.cgsociety.org/gallery/



SOMEONE'S HOUSE

Juan I. Casale

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jicasale@3dnpost.com.ar



CASA COLONIAL

Alfonso Escalona

estudioae@yahoo.com

IDECT PHONE

Sean Dunderdale

www.seandunderdale.com

sean@seandunderdale.com



WARM UP

André Cantarel

<http://www.cantarel.de/>

andre@cantarel.de

Be sure to catch an interview with André in
next month's issue of 3DCreative Magazine!







www.vue6.com



**Solutions for
Natural 3D Environments**

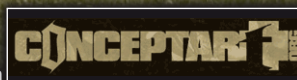
the 3DC challenge

3DCreative Magazine introduces the 'Challenge' section of the mag. Every month we will run these challenges, available for anyone to enter for prizes and goodies from the www.3dtotal.com shop, and to also for the chance to be featured in this very magazine! The 2D Challenge runs in the ConceptArt.org forums, and the 3D challenge runs in the Threedly.com forums. Here we will display the winners from the previous month's challenges, and the Making Of's from the month before that...

Herbivore Dinosaur

Stylised Animal challenge

In Association with



Stylised Animal Challenge

Herbivore Dinosaur

THE CHALLENGE

Welcome to the Stylised Animal Monthly Challenge. Each month we will select an animal and post some images in the forum thread as reference. All you have to do is to create a 2D image of this creature in a stylised/abstract/cartoon style, whilst keeping your creature instantly recognisable. We wanted to publish some content in 3DCreative Magazine on how to create stylised animals, such as you see in the many



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10TH - PENGUINS

lukemetz@gmavt.net



9TH - FIREHAZURD

firehazurd@yahoo.com



8TH - CHRISKING

feature films and cartoon galleries. We thought this regular competition might bring in just the images/Making Of's that we need, whilst giving away great prizes and exposure. If it continues in success we will try to boost the prizes as much as possible! This month's 'animal' was: Herbivore Dinosaur. Here you can see the top 10 entries, as voted for by the public...

WHAT ARE WE LOOKING FOR?

Funny and humorous entries which break the animal down to its most recognisable components; emphasise these in whichever ways you think best, and render your stylised/abstract/cartoon masterpiece. The rules are

pretty laid back: please submit 1 x 3D render (minor post work is OK); it's up to you if you want to have a background or include some graphical elements or text on your image. Renders of the 800 pixel dimension sound about right, but the winners will be featured in 3DCreative Magazine, so if you can create some higher res images too, then all the



better! There will be one competition per month, with the deadline being the end of the month (GMT). For a valid entry, just make sure your final image is posted in the main competition thread before the deadline. We require the top 3 winners to submit 'Making Of' overview articles that will be shown on either 3DTotal or in 3DCreative Magazine. These need



3RD - NYPHE

www.graygiant.com



2ND - MAPE

mapestudio-on@hotmail.com



**norman
anderson**

1ST - NORMAN ANDERSON

norman.lemes@gmail.com

to show the stages of your creation, different elements, and some brief explanation text of why, and how, you did what you did. We will format this into some nice-looking pages to give you some great exposure, and us some quality content. Each competition will have one main thread which starts with the brief at the top. All entrants should post all WIPs, give feedback, and generally laugh at the crazy ideas that are emerging each month!



2ND SCARYPOTATO



3RD LINBAR

CHALLENGE THREAD

The entire **HERBIVORE DINOSAUR** competition can be viewed [here](#).

The current challenge at the voting stage is:
CARNIVORE DINOSAUR

The current challenge taking place is:
'SWIMMING DINOSAUR'

To join the next challenge, or to view previous and/or current entries, please visit:
www.threeddy.com

Or, for the 2D challenge, please visit:
www.conceptart.org
Or contact: lynette@zoopublishing.com

2D CHALLENGE

Here are last month's top entries from the 2D competition...



1ST EINEN



MAKING OFS

Here are the Making Of's from last month's top 3 winning entries...

3RD - HUSAM

CONCEPT:

For this project I decided to start out a little bit differently than I normally would do. So instead of making some concept sketches, I decided to do a quick Google search, just to get a flavour of how other people would go about making a stylised hyena. I especially liked the trio of the Lion King. One of them, I guess his name was Ed, had this crazy look with an expressionless

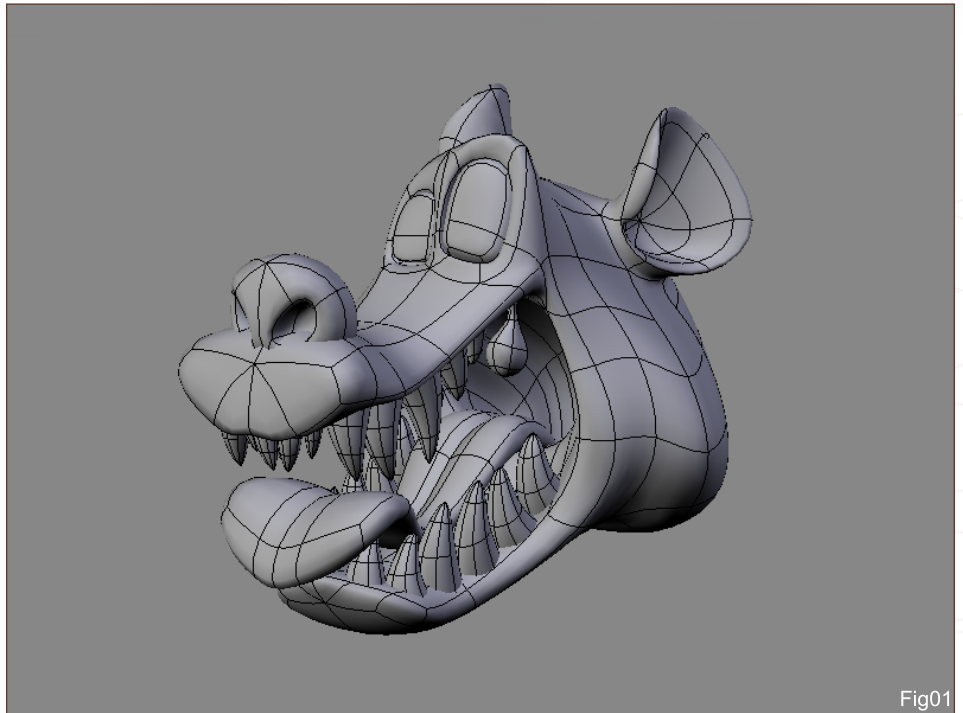


Fig01

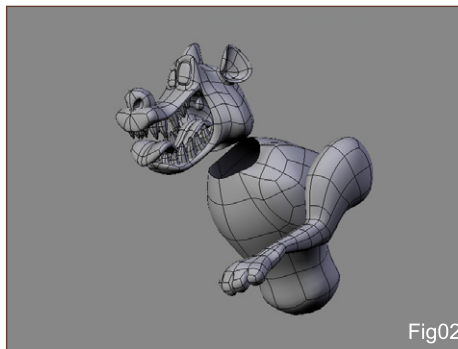


Fig02

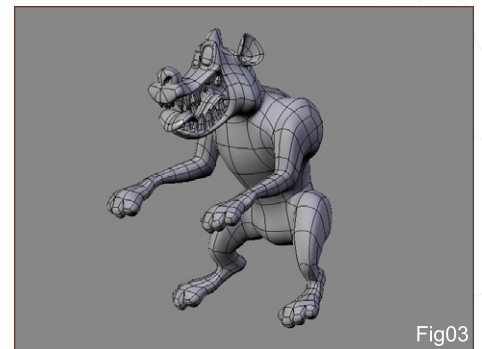


Fig03

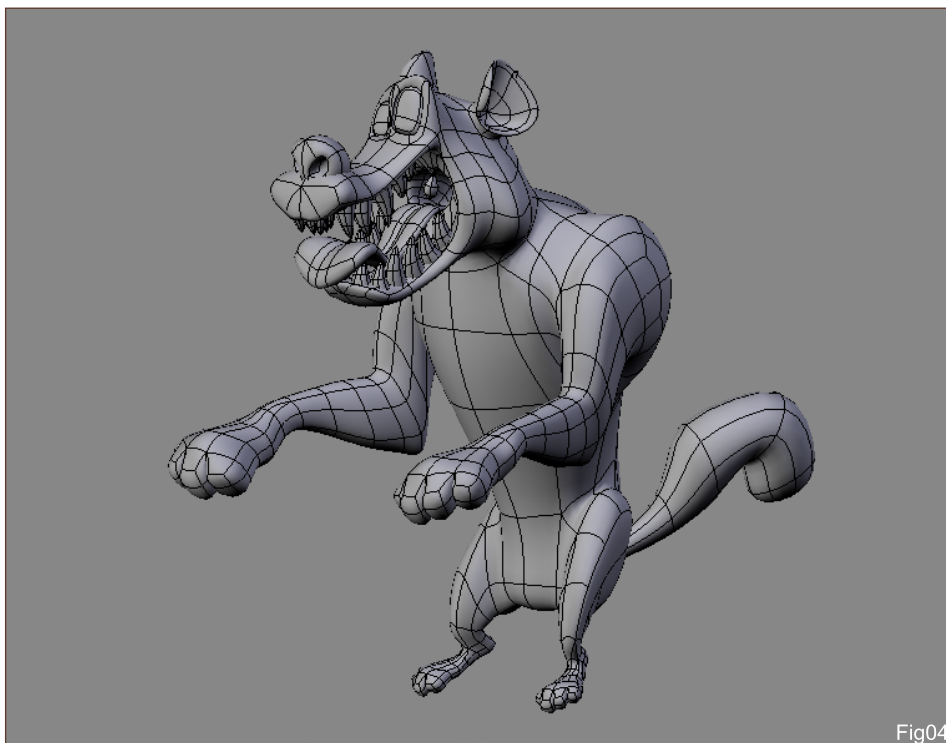


Fig04

face and a hysterical laugh. I wanted to have the same combination in the character I was going to make. That's where the idea of a crazy hyena jumping with a pogo stick came from.

MODELLING:

Usually I would model my characters in a neutral pose so that I can rig them and repose them the way I like. But since I decided to participate in this challenge a bit late, I had to model the hyena straight into the final pose in order to save some time, especially since this pose was by no means sophisticated. Keeping in mind the final look I wanted for my hyena, I started to model him in Blender using a poly-by-poly approach. I started out with a simple plane, enabled the mirror modifier, and continued from there by extruding and moving vertices along the way. It was important to get the expression

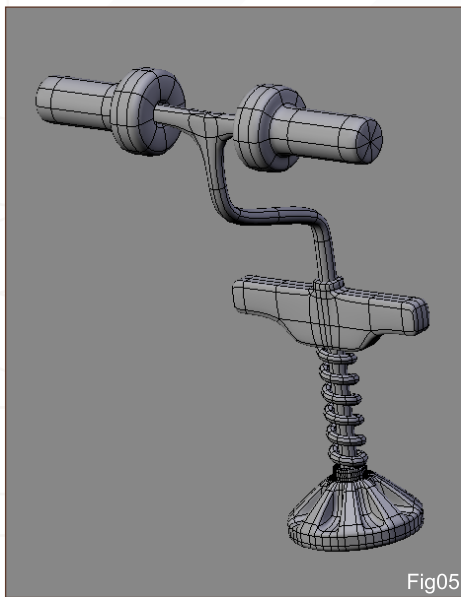


Fig05

right at an early stage. So once the head was done, I applied the mirror modifier and started adjusting the eyes to break the symmetry and reinforce the crazy look (Fig01).

The rest of the body was modelled separately to take advantage of the mirror feature without affecting the now asymmetric head. The legs and tail were also modelled separately from the main body. First I modelled the front leg, then I duplicated it and adjusted it to make the back leg. I then attached the legs to the main body. I didn't bother joining the tail with the rest of the body because that area wasn't going to appear in the final render. I finally joined the body and the head together. I wanted to characterise his figure even further, so I used Blender's proportional editing tool to scale down his hind legs (Fig02 – 04).

The pogo stick was fairly simple to model: just some extruded circles and planes to get the desired shape (Fig05 - 06).

HAIR:

I selected a couple of polygons from the back of the hyena model, duplicated them, and separated them from the original mesh. I then created a static particle effect for the duplicated polygons, to make the hair. I used three curve guides to control the flow of the hair

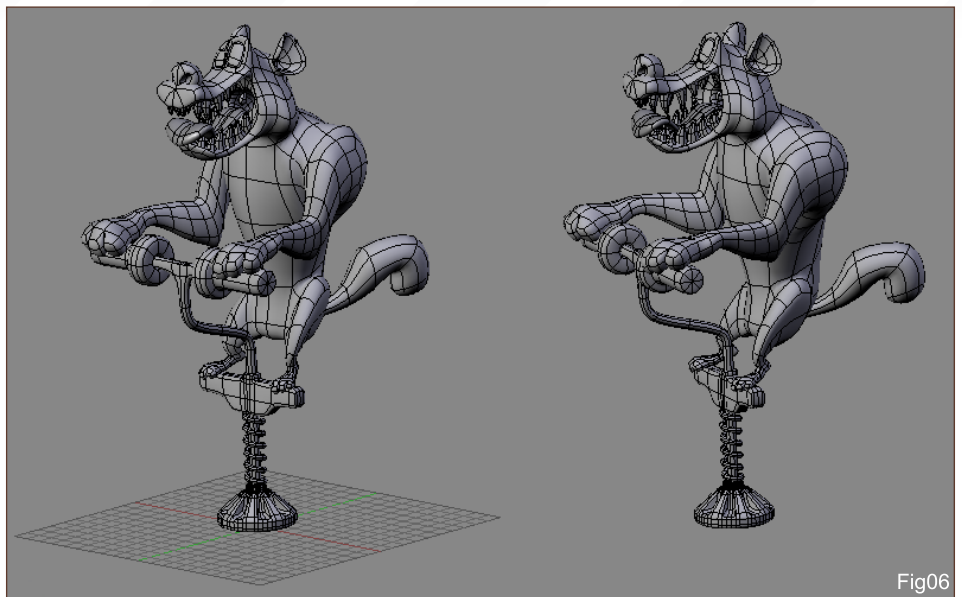


Fig06

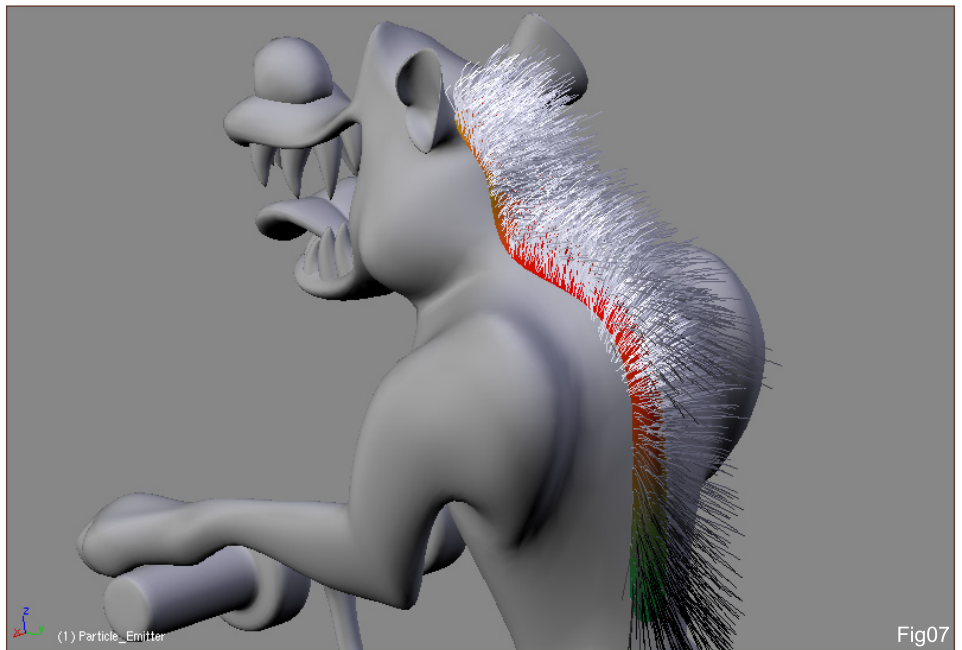


Fig07

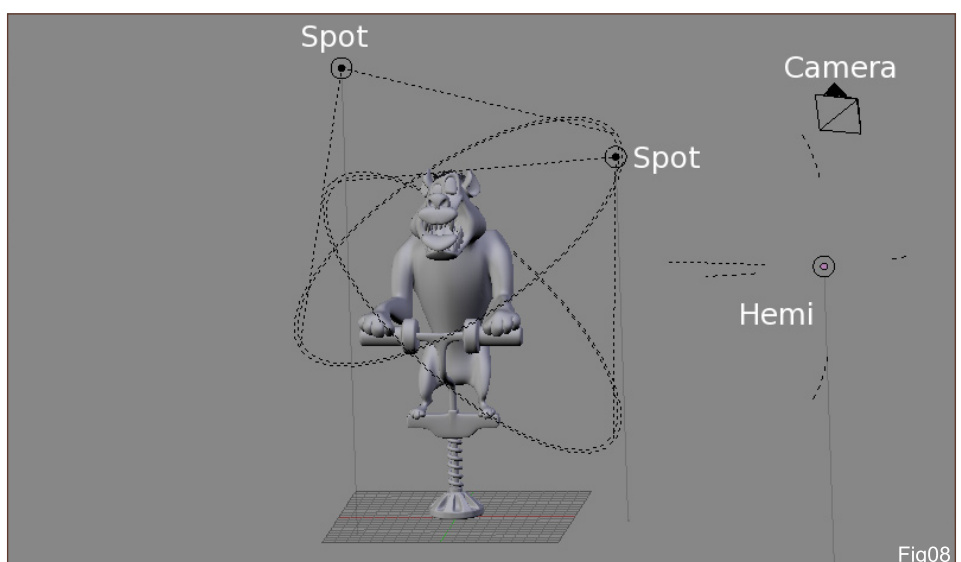


Fig08

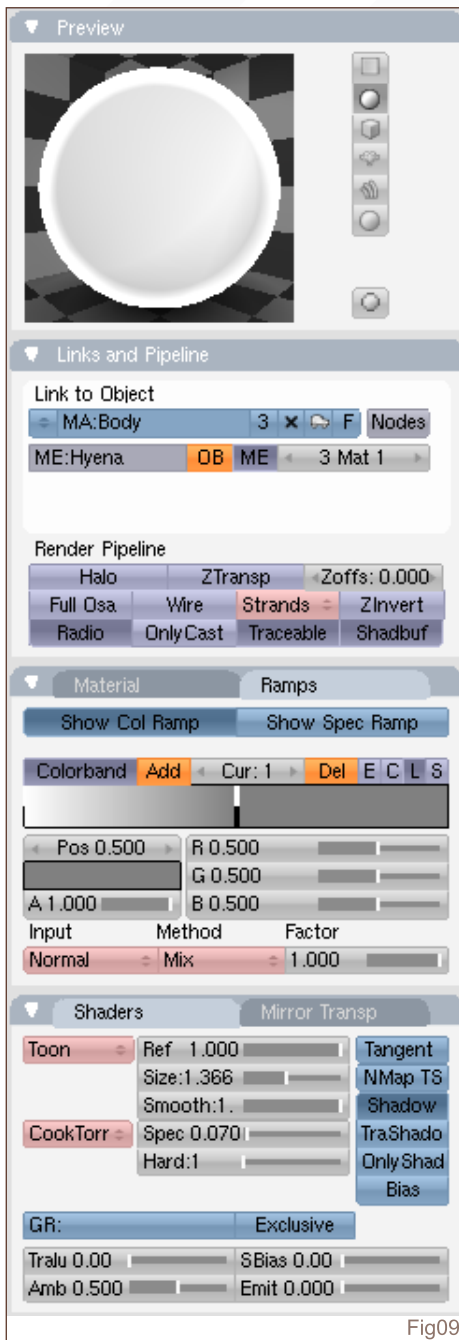


Fig09



Fig11

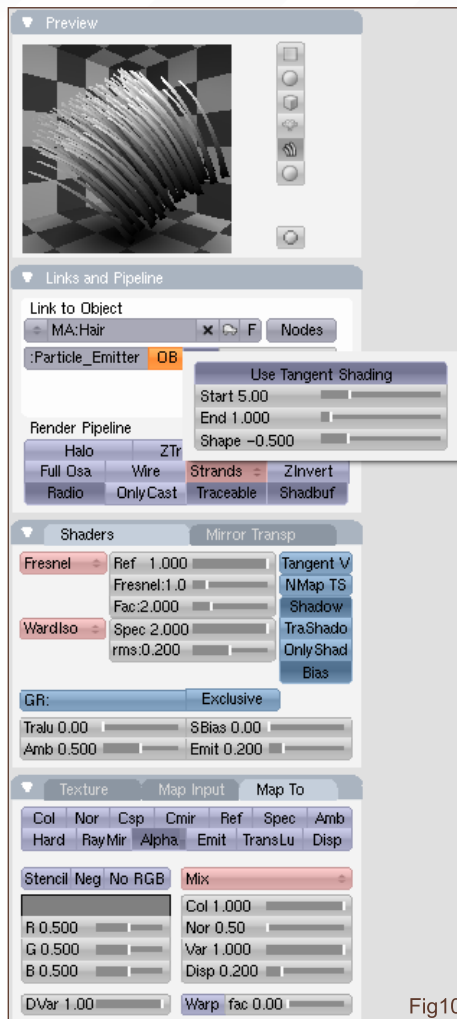


Fig10



Fig12

and adjusted the length of the hair strands in Blender's weight paint mode (Fig07).

LIGHTING & SHADING:

The deadline for the challenge was drawing near quickly at this stage, so I had to settle for a plain background for my character. That's why it was important to have him lit evenly from all directions. I used one hemi light (similar to 3ds Max's Sky light) and two faint spots (Fig08).

I also used a Toon shader for the body of the hyena with a very high 'Smooth' value, to achieve a smooth transition between lit and shaded areas (Fig09). The 'Size' value of the Toon shader was also high to have as little shadow as possible. Then I added a ramp shader to have a smooth, peach-like colour fall-off. I also used the same material for the plastic of the pogo stick. The nose, tongue and metal on the pogo stick had a material with a high specular value. In Blender, the shape of the hair strands can be controlled in the material panel. So I gave them a large base to simulate thick hair and a small tip to have them blend smoothly into the background (Fig10).

To further enhance the effect, I assigned a procedural blend texture to the alpha channel of the individual strands, making their bases fully opaque and their tips fully transparent. All materials had a neutral grey colour.

RENDERING:

Being a lousy painter, I've always had difficulties during the texturing process. Trying to make a good UV map, hiding seams and readjusting colour maps because they look different after being lit, to name just a few. I didn't have enough time to deal with all these problems, which is why I decided to render this image



Fig14



Fig13

in greyscale and paint over it directly in Gimp (Fig11). I also rendered an ambient occlusion pass and prepared a selection pass to be able to select the areas I wanted to paint over easily in Gimp (Fig12 - 13).

The hair was quite tricky to select, so I had to render a separate matte for it. I knew this

method of selection might produce some "jaggies" and rough edges (Fig14), so I had to render at a high resolution so that I could scale the image down, just like in oversampling (an anti-aliasing technique). However, it couldn't be too high, as my 512 MB ram needed to be able to handle the number of layers I was going to use. A resolution of 2560 x 2048 seemed quite reasonable, and I kept my fingers crossed that my ram would be able to handle it. All passes were rendered using Blender's internal renderer.

COMPOSITING:

I loaded up my raw render and selection pass into Gimp, and started painting. There I could select an area of my image using the selection pass, add a new layer, change the layer's blending mode to Color, and fill the selection entirely (or I could have painted inside it with one colour). This blending mode basically changes the colour I paint with, according to the value of grey in my base layer (the raw render), which is in turn controlled by my lighting and shading settings. For black, I would change the blending mode to Multiply, Hard Light or Burn.

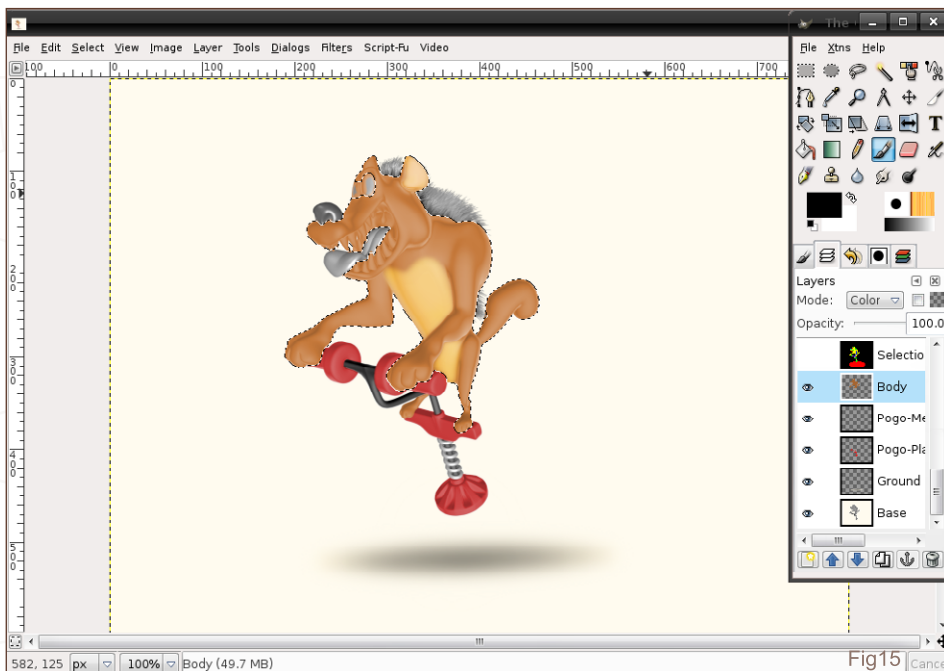
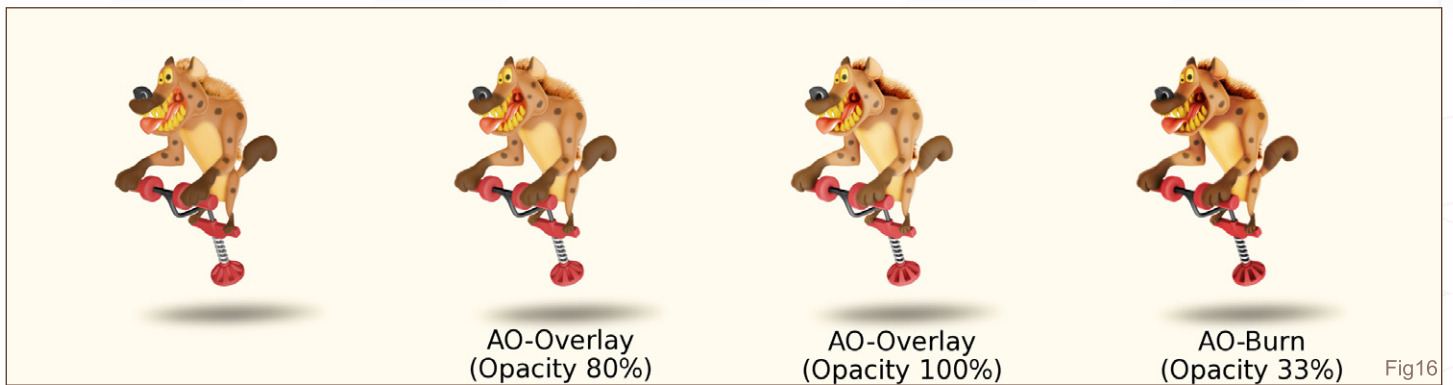


Fig15



I continued with this process until all the image was coloured. If I thought that a particular area of the image looked too bright or dark, I would select that area and use the Levels tool on my base layer to fix it. If I didn't like the colour of a particular part, I would use the Colorize or Dodge/Burn tools on the corresponding layer to adjust the colour to my liking (Fig15).

The wonderful thing about this method is that I could try out different possibilities and see all the changes made in real-time! I then placed the AO pass on top of my layers stack and duplicated it twice. I changed the blending mode of two of the AO layers to Overlay and the third one to Burn. This basically enhanced the lighting of the image and restored some of the details that were lost because of the Toon shader (Fig16).

To finish it all off, I added a subtle light wrap effect to blend my foreground elements into the background, and I scaled the image down to get rid of any rough edges.

I would like to thank 3DTotal and 3DCreative for organising this challenge and for the opportunity to write this making of. I would also like to thank my friend, Alhaitham Jassar for inviting me to participate in this challenge. I hope you've enjoyed reading this making of as much as I have enjoyed writing it.

HUSAM

You can contact the artist at:

huielbashir@gmail.com



2ND - ZINKETE

First of all I began with an outline of the general idea of how the hyena should be. Basically, the idea was to create a character with a very expressive and large head. That's why I made me hyena with big eyes and a large mouth (Fig01).

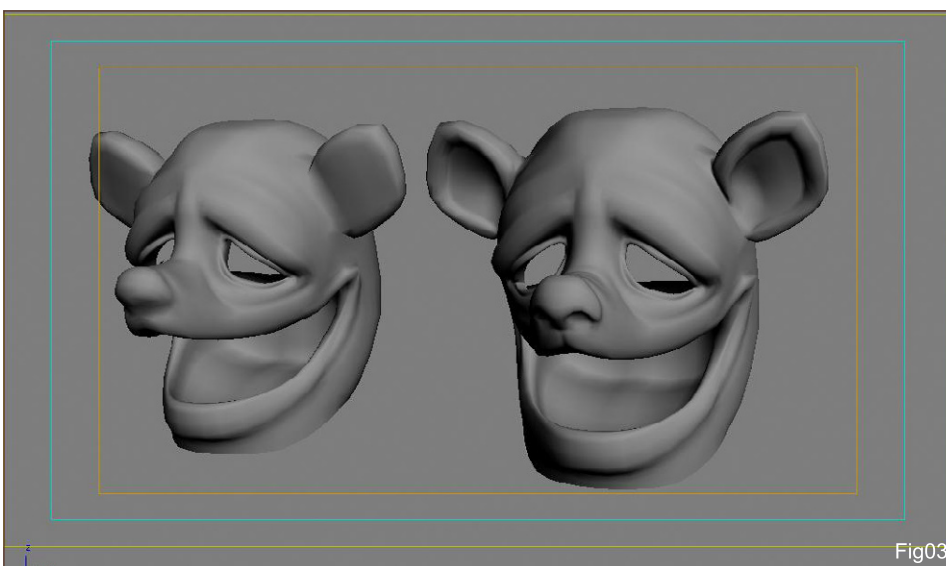
The first step that I always take when modelling is to start with the outline of the eyes and the mouth, with very simple shapes. Then, using the poly to poly technique, I spread these basic outlines and give them volume (Fig02).

Once I had the basic volume, I filled the holes until I achieved a basic model, showing the proportions of how the final model would look (Fig03).

When I was satisfied with the head of the model, I carried on and made the body, which I then added some details to (Fig04).

With the body already made, the next step was making the rest of the elements and accessories (Fig05).

When I had the model defined, I took it into ZBrush. There I sculpted the model, in order to simulate the fur, and I also created the texture of the skin by hand. I exported the created relief in a normal bump map, and the colour map as a bitmap. I also obtained a cavity map that I could



later use in the creation of the texture of the skin (Fig06 - 07).

I used the map I made in ZBrush for the skin, mixed with a darker version of itself. I used the map cavity map, that I mentioned before, as the quantity for mixing. Finally, I textured the rest of the elements. In order to deform the model, I used a biped system from Character Studio and a skin modifier.

With the pose defined, the next step was to light the model. I used two Spot lights; one on each side and a front Vray light. I also helped myself out with an HDRI map, to light the scene as a whole and to achieve a more homogeneous result (Fig08 - 09).

Once I reached this point, the next step was to make a stage for the hyena to dance upon. I made a stage which had been decorated in a shabby way, with cardboard props like plants and clouds. To give it an even shabbier impression, I also included props which had been thrown on the floor, and a hand-painted background (Fig10).



Fig06



Fig07



Fig08



Fig09



render



occlusion



z depth




Fig10

With all this finished it's time to render. I have taken out 4 renders: the final image, the occlusion channel, the Zdepth channel and a materials IDs channel (Fig11).

I mixed the final image and the occlusion channel in Photoshop, by means of Multiply. I added the Photoshop Lens Blur effect to these two layers. I used the Zdepth channel as an alpha, to mask this effect.

material id
Fig11



Finally, I made some last minute corrections, with the help of the materials' ID render. The last step was adding my signature and text to the image.

DIEGO MOISES MONTES

For more work by this artist please visit:

<http://zinkdesign.blogspot.com/>

Or contact them at:

zinkete@gmail.com

Stylized Animal Challenge
“ballet dancer hyena” by Zinkete



1ST - XINEOF

CONCEPT:

This is not exactly what we can call a "concept", but more of a "global orientation"; some kind of experimentation in which to help me find a style for my illustration. First of all, I thought about modelling with oppositions: flat/curved surfaces, hard/smooth edges and so on, in order to give style and to focus on specific parts of the hyena. I then considered a strong and dynamic pose, to set the hyena in motion or at least to make the illustration full of life. Finally, I considered the final image composition, which involved thinking about the frame format, how to fill it and what with.

So, what about a crazy dude trying to catch his prey? Frame it like a National Geographic documentary shot and you've got it: dynamism and a movie-like composition. All I had to think about then was the stylisation part...

With all my ideas in mind, I started doodling. However, since I'm not what we can call, "a drawer" (Fig01), I ended the sketching stage quickly and started on the 3D work.

MODELLING:

The little sketch I made allowed me to block in the global volumes of the hyena, as well as the polygon flow according to his muscle behaviour (which is very useful when having to deal with the skinning and posing parts). Work then

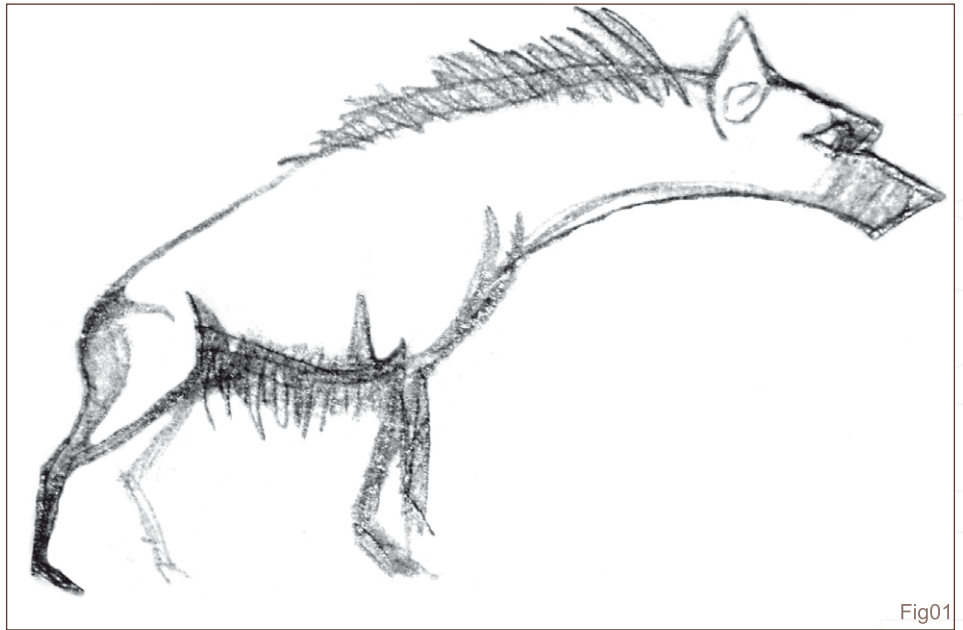


Fig01

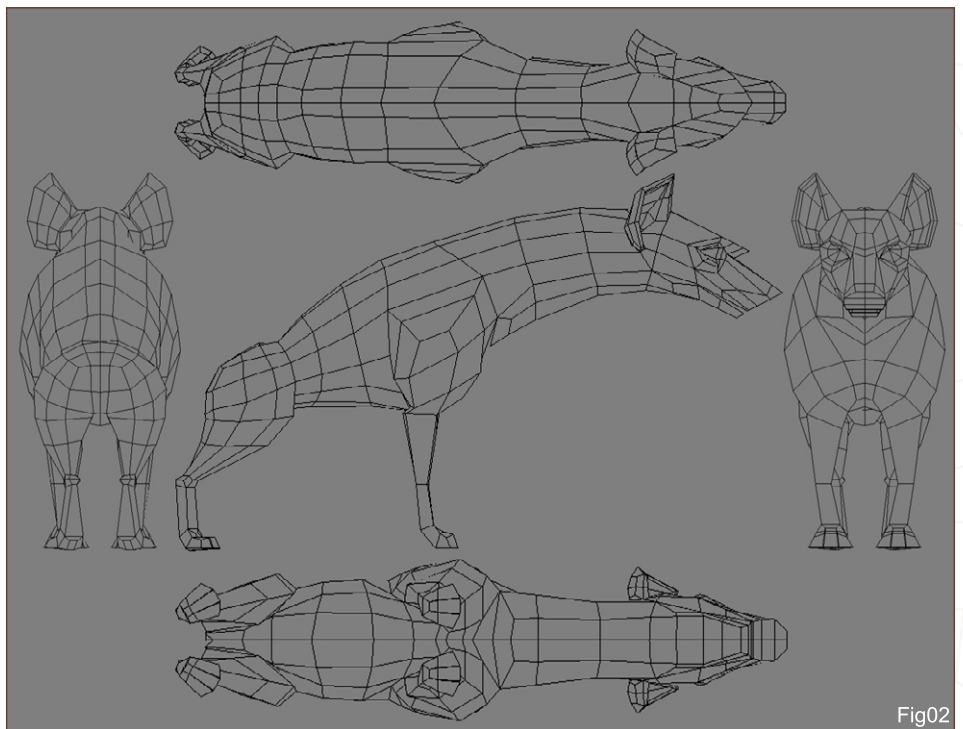


Fig02

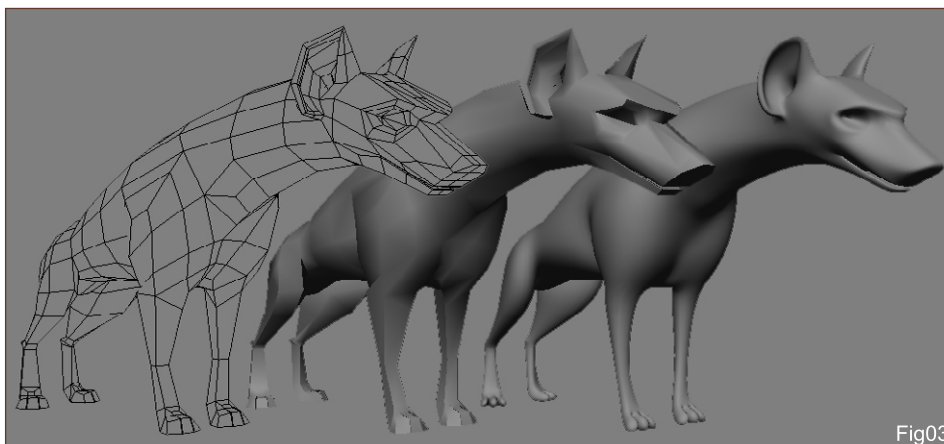


Fig03

continued refining the geometry, adding edges and polygons, extruding, welding and so on, for several hours, and I finally achieved a good base model to work with (Fig02). The bad thing was that I lost almost every 'cool' aspect of the low poly version as it got smoothed (Fig03 - 04). The solution: hard edges and cleaning!

It took me some time to find out what worked best in order to get those hard - as well as curved - edges. Duplicating and scaling faces

inwards, or moving vertices, is not enough (Fig05) – you really have to clean things up (Fig06), otherwise you get an ugly, smoothed version of the model. This happens especially where parts join together, like the fingers, legs and arms with the hips and chest, and the ears and so on.

The head and feet were what I liked most about the low poly version, and the face is one of the most recognisable components of the hyena (Fig07). I focused on these parts, trying several vertices dispositions (Fig08). I kept in mind not to alter the poly flow to get a nice-looking, smoothed version (Fig09).

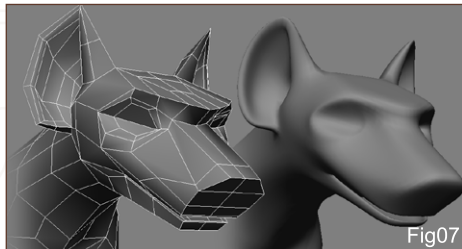


Fig07

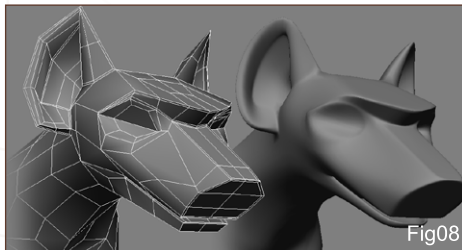


Fig08

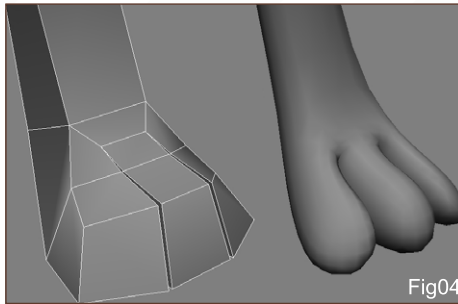


Fig04

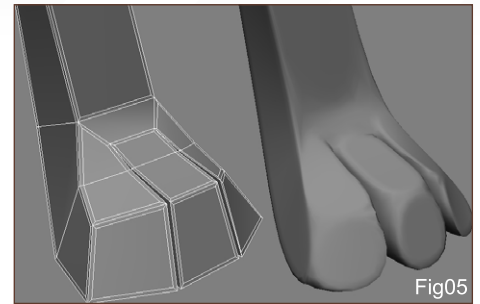


Fig05

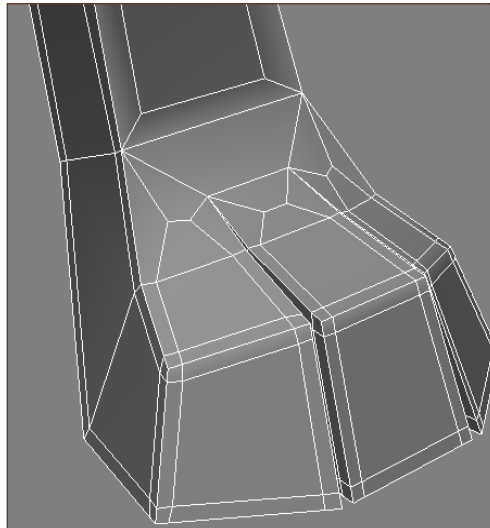


Fig06

Finally, a mouth interior with teeth and a tongue, and the eyes, completed the modelling (Fig10). Everything was almost all in one piece at this stage, for skinning purposes.

SKINNING:

One cool thing about XSI is its biped and quadruped guide, which lets you build a complete skeleton with it. This can be fairly time-saving and useful when you are in a rush! Simply import the guide (Fig11), move some bones to make them match your geometry virtual bones (Fig12), generate the skeleton (Fig13), and that's it. I was then ready to skin (Fig14).

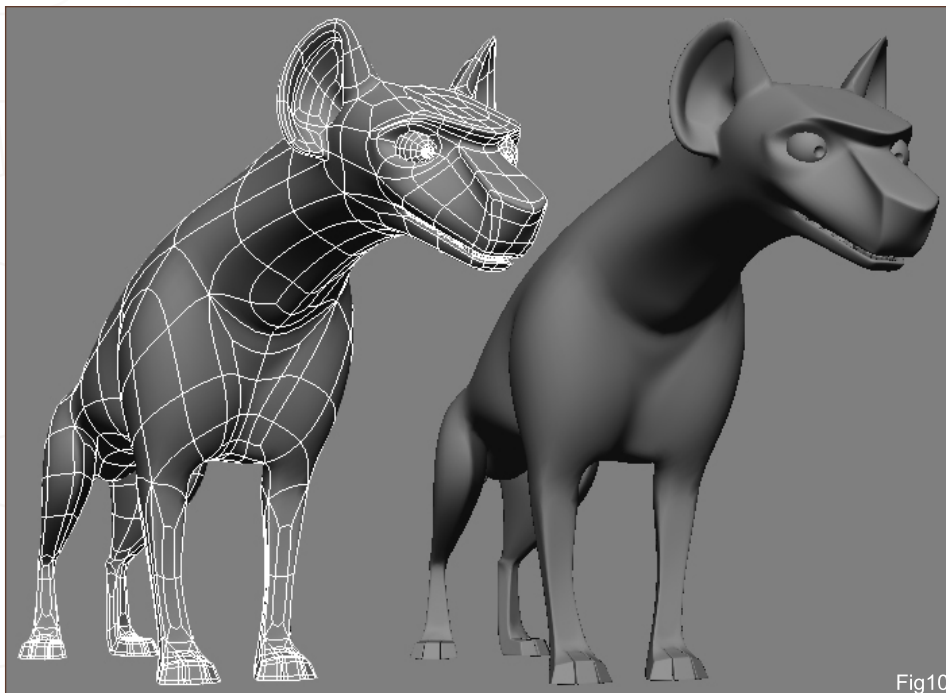


Fig10

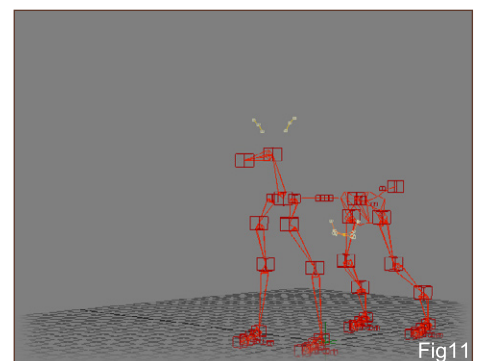
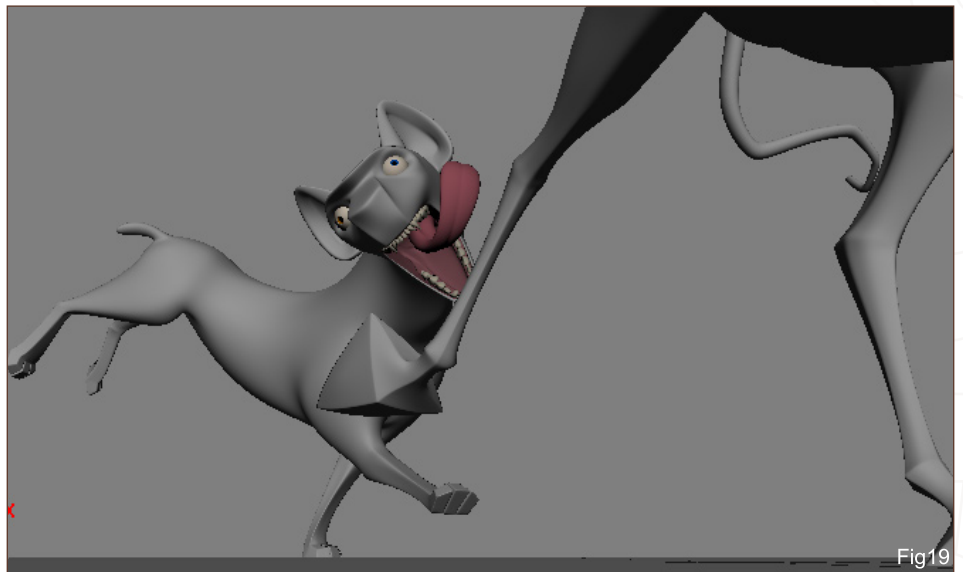
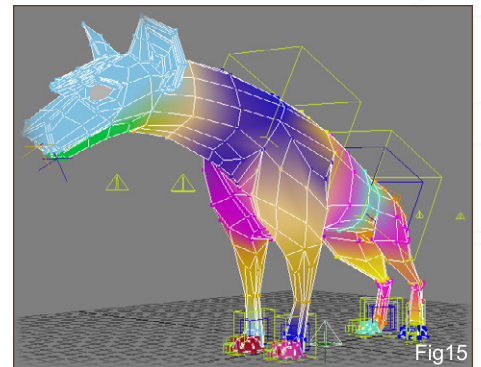
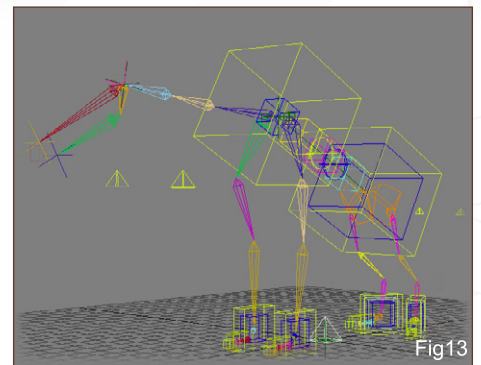
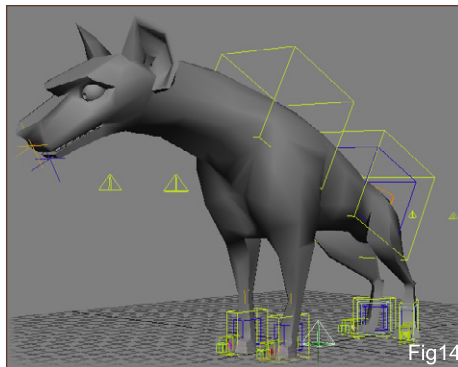
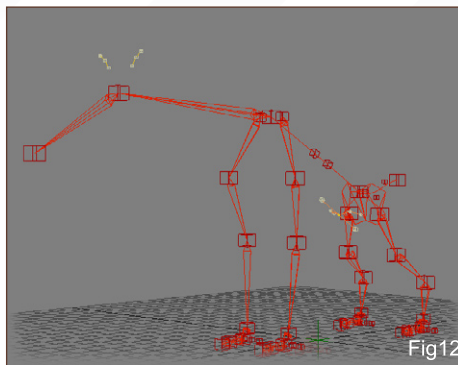
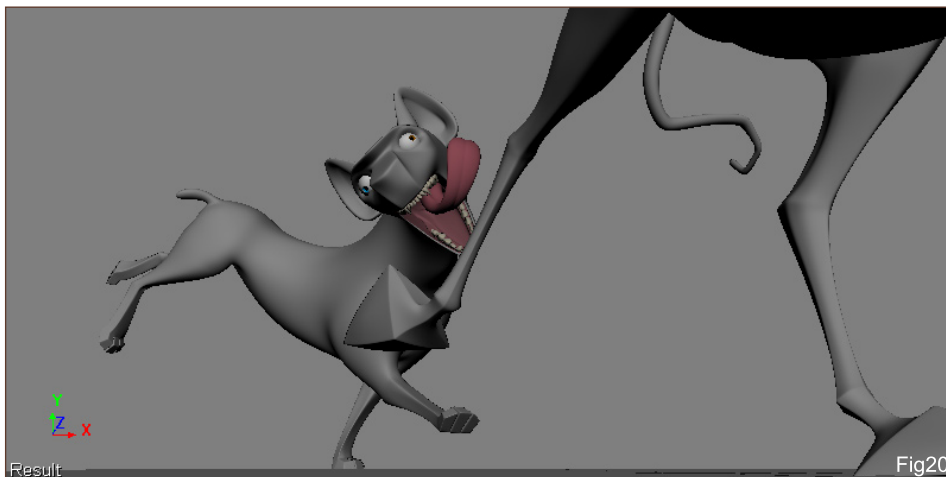
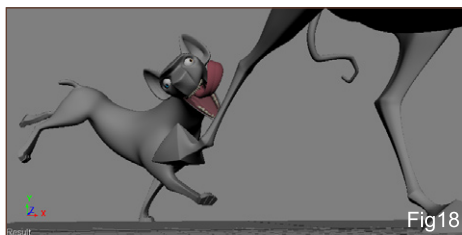
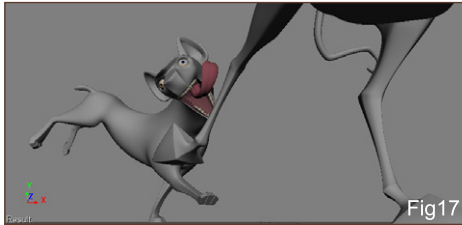


Fig11

It didn't need to be really accurate since the hyena was not going to be animated. Just 2 or 3 weighted influence brush strokes (Fig15), plus a symmetry map, and I could give my hyena the pose I wanted.

COMPOSITION (FRAME, POSE...):

Dynamism, dynamism, dynamism was all I was looking for - with stylisation (4/3 or 16/9 format then). To achieve this, I chose a cinemascope, such as a 2:1 format picture ratio, so I could find a close-up and still get an understandable overall action shot. I wanted something close to the floor, looking up at the chasing hyena which



is ready to give its prey a bite. The hyena is facing us, even looking at us, and we can start to figure out its craziness. The prey is trying to escape...

A few attempts later (every time I opened my 3D scene, to be honest) (Fig16-19), I got close to what could be called my "final composition" (Fig20). I made some geometry refinements at this stage, due to the not-so-accurate skinning for textures.

TEXTURING:

Next came the part I enjoy the most (or not!). I didn't want to unfold my UVs, and neither did I want to paint any maps in Photoshop. The only solution was therefore to use ZBrush. I divided the geometry as much as my computer could handle, and added RGB brush strokes right onto the model. It was a bit rough, but it worked pretty well. With some hand-made alphas and good colour references, it was pretty quick, especially with the "drag rectangle" tool and the "replay last stroke" option. You choose an alpha, click and drag onto the mesh (in edit mode with only RGB activated and with Zadd and Zsub deactivated) (Fig21), and you can change the size and the orientation as long as

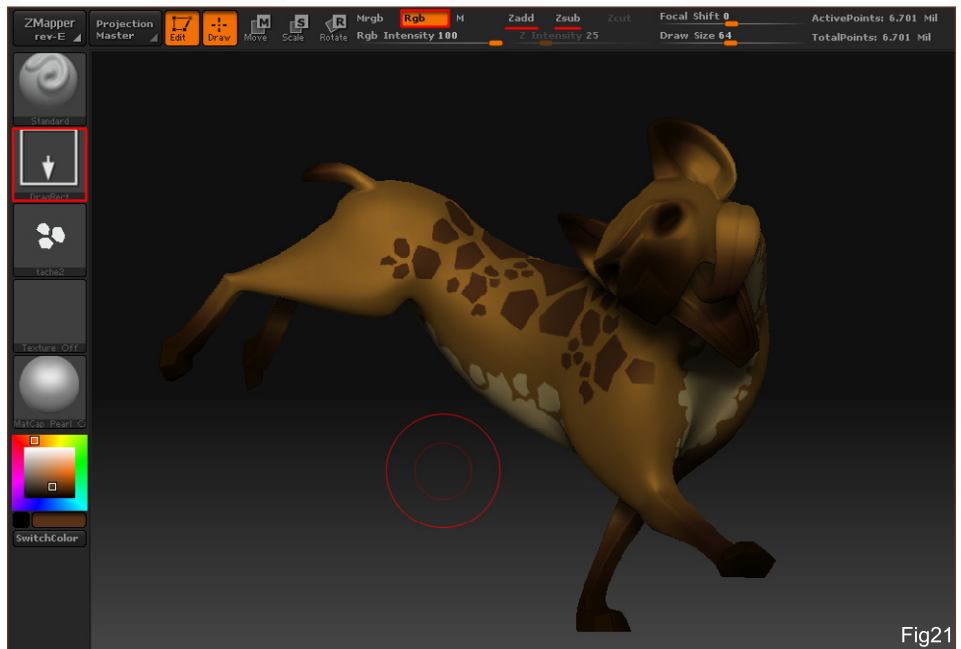


Fig21

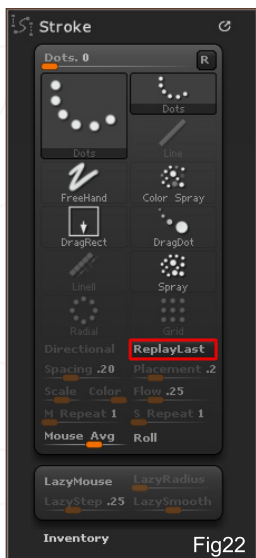


Fig22

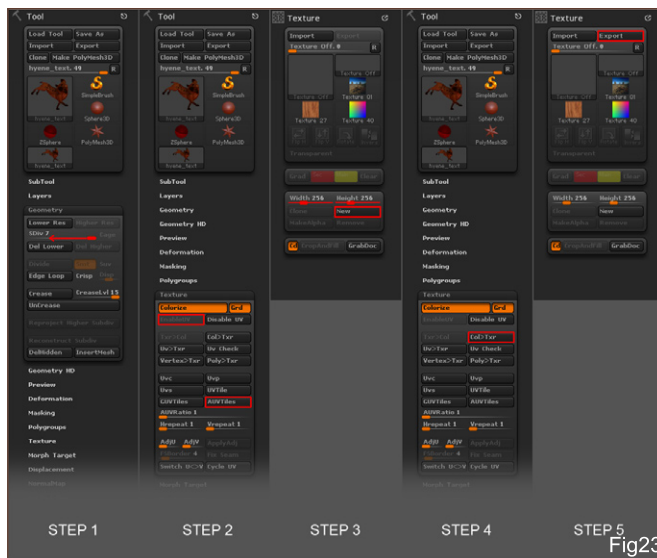


Fig23

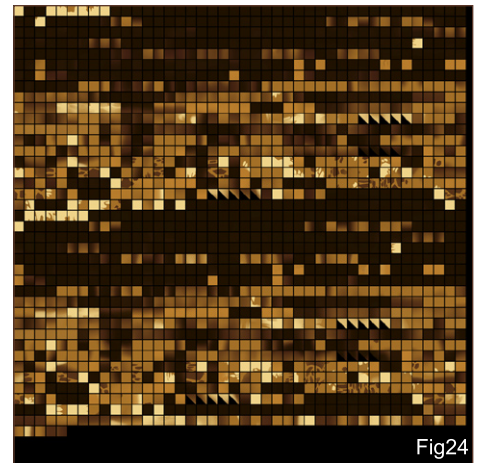


Fig24

you keep your mouse or your stylus pressed. Going to Stroke > Replay Last (Fig22), makes ZBrush redo the last stroke (be careful not to change the viewport orientation since it's considered as a stroke, as well). You can then refine the last pattern, making it less transparent or changing its colour. When done, I exported the texture, which is quite simple if you follow these steps (Fig23):

- 1) Go to tool > geometry: lower the subdivision level to its minimum;
- 2) Go to tool > texture: "enable UV", then hit "AUVtiles";
- 3) Go to texture: set width and height, and then hit "new" (the model gets a plain colour – that's okay);

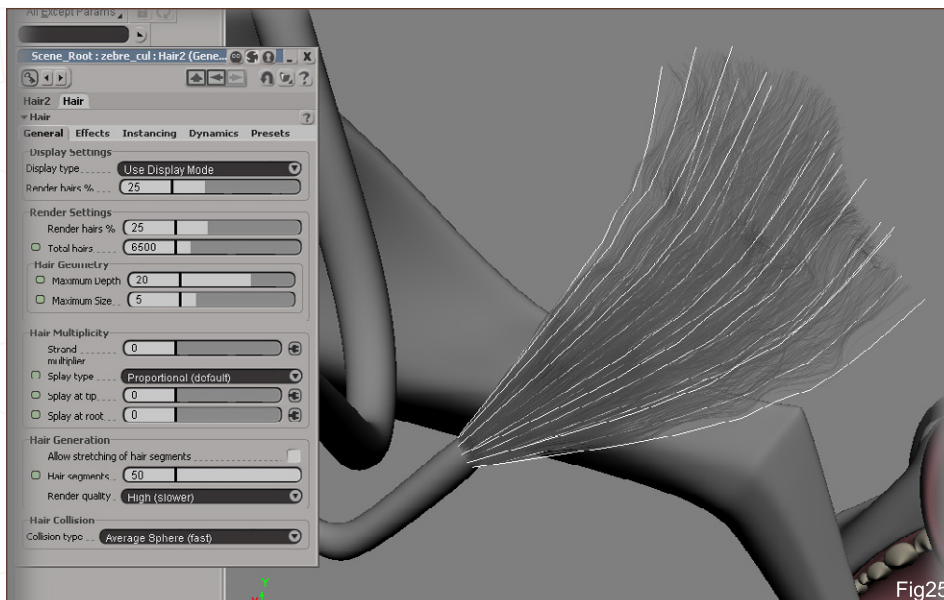


Fig25

- 4) Go to tool > texture: hit "Col>Txr" and that's it - the painted texture is back again;
- 5) Go to texture: hit "export" and choose a place to save it

The bad thing was the UVs' template, which made the final map look like a QR Code (Fig24). (If you previously unfolded the model UVs, you don't have to hit the "AUVtiles" button on step 2, just "enable UV".) The map you'll export can be "Photoshopped", later on.

HAIR:

I was wondering if hair would be a great idea, since I'd never used it in XSI before... It should have meant more work and would have been a waste of time if I didn't find a simple way to get what I wanted. On the other hand, I faced some perspective issues, due to the hyena's head orientation right in the camera's axes. It appeared quite weirdly, but the shot angle was cool, so I decided that hair would perhaps make

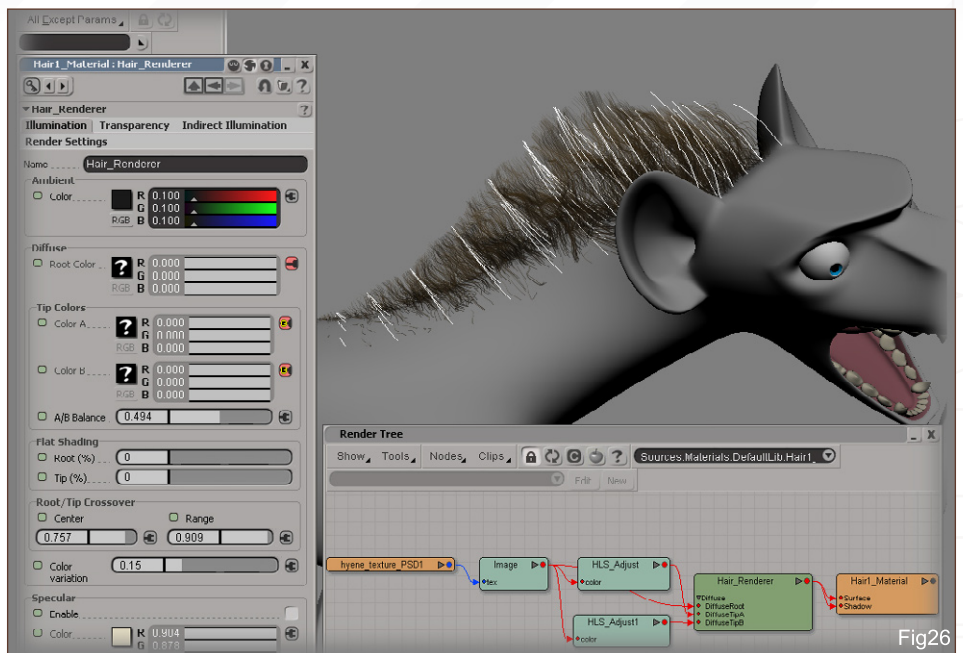


Fig26

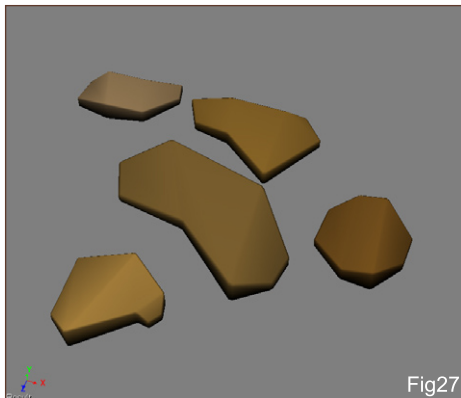


Fig27

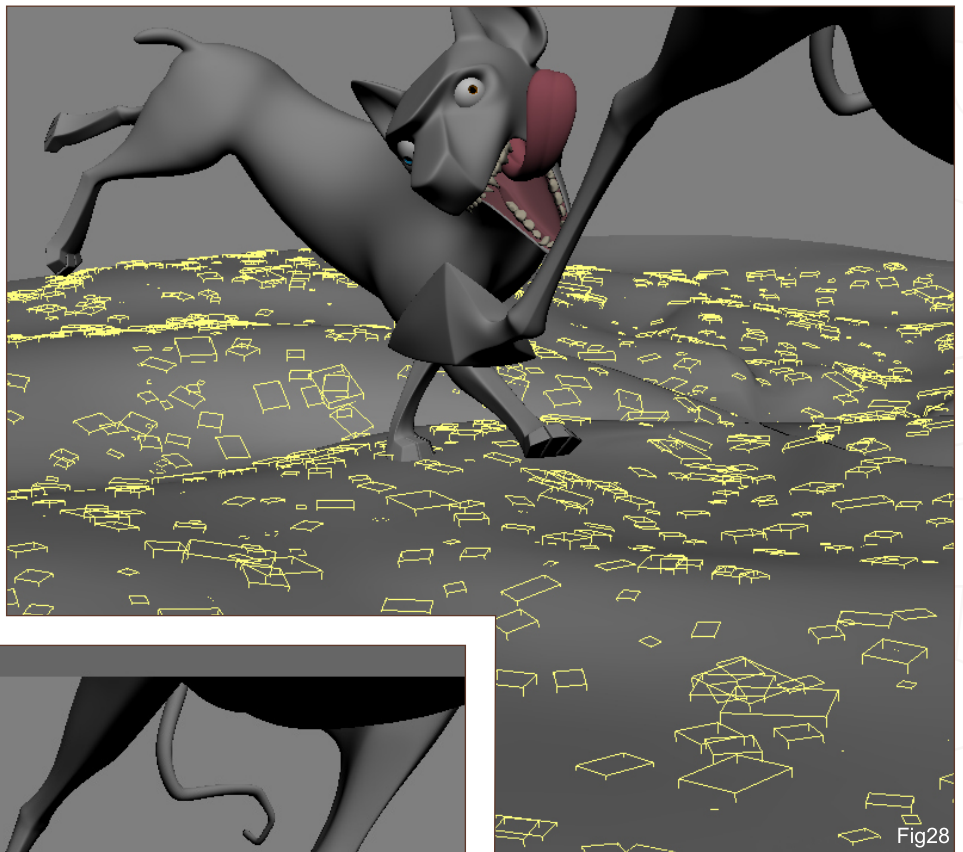


Fig28

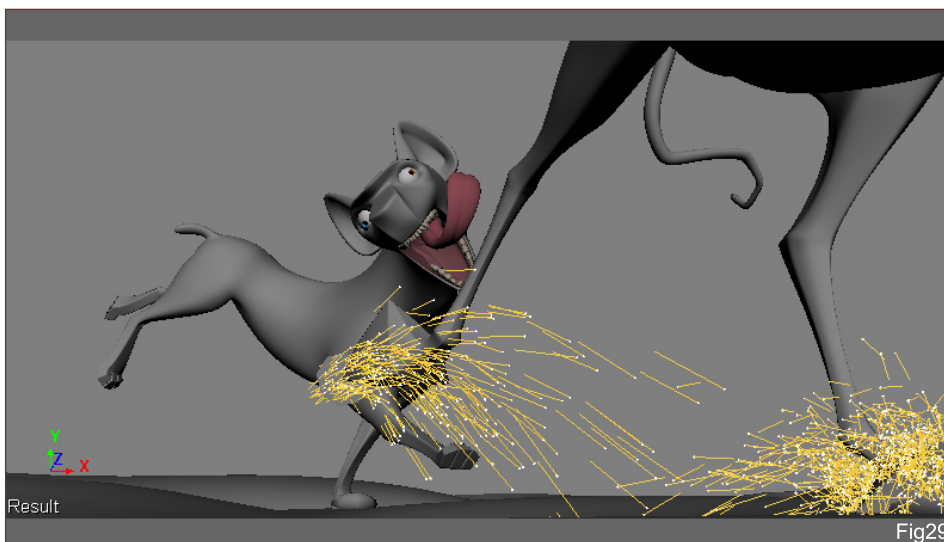


Fig29

things looks good! Moreover, the zebra tail needed it!

Thankfully, it's really intuitive in XSI: you create hair according to a surface or a face selection, and then you brush, cut, make puffs and so on, as if you had a comb in your hand (Fig25 – 26). The rendering options let you choose almost

every aspect of each hair: root/end colour, transparency, specular and so on. I mixed it with a texture map (another great thing in XSI), and I achieved some complex hair styles.

PARTICLES:

Just for fun, since it's one of the tools I use the most in my every day job, I added a cloud with geometry instanced (rocks) to add some details on the ground (Fig27). Emitted from the soil, without velocity, it acts like a scatter, but with more control (Fig28). I used one for the sand and another for the dust, for live-action shot purposes (Fig29 – 30).

RENDERING:

Rendering is the second part that I enjoy the most – almost as much as the texturing one!

So the simpler the better, here! Blinn or phong shaders most of the time, a colour or a texture map plugged into the diffuse, and the same colour or texture map can then be mixed with an incidence and plugged into the incandescence (for a velvet effect) (Fig31 - 33). Then some specular tweaking was done to get some cool

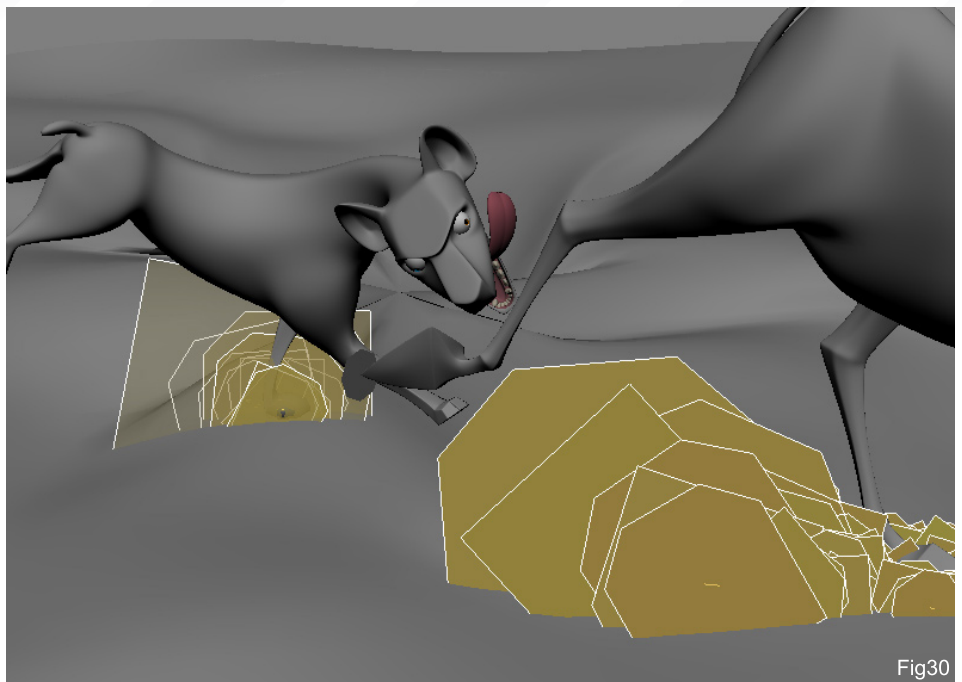


Fig30

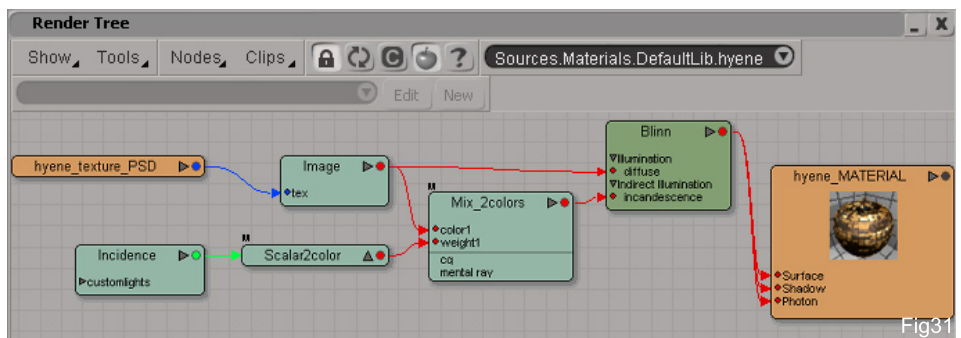


Fig31

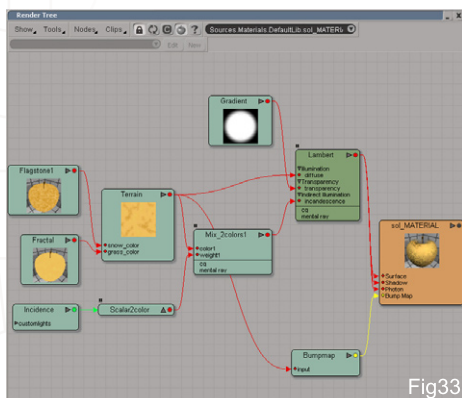


Fig33

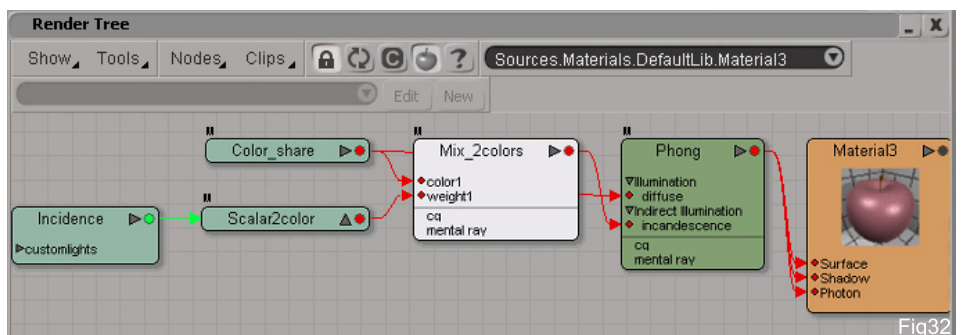


Fig32

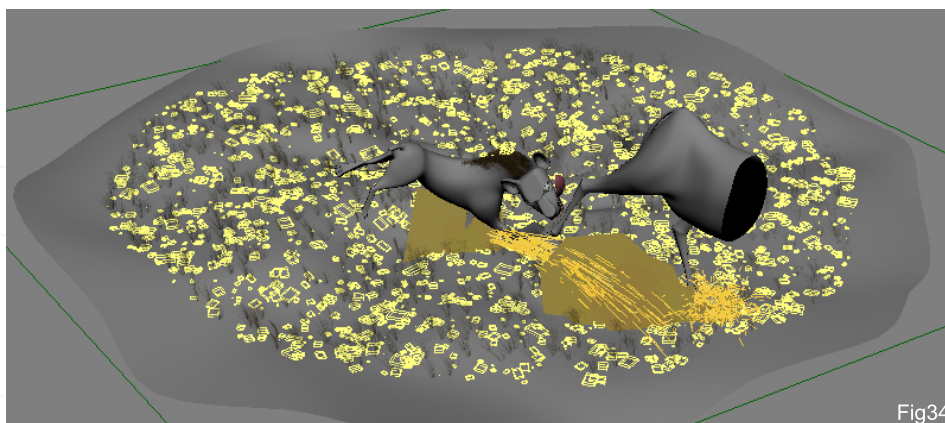


Fig34

highlights on the surfaces: large and diffuse for animal skins; small and rough for wet surfaces. Finally, I added bump maps here and there.

Physical sky was added to illuminate the scene, and that was it. I enabled final gathering and rendered (Fig34 – 35). In XSI, physical sky is just an infinite light (casting shadows); its direction drives a 2D background colour (working as an environment sphere). I couldn't have made a simpler lighting rig!

Four render passes were made for compositing and adjustments purposes, so I could still change the colour, contrast and so on in Photoshop without re-rendering again and again. One main colour pass was made (with final gathering enabled) with all objects except particles and background colour (Fig36). A dirt map pass was made for the contact shadows (it really helps to understand how objects fit together in the final picture) in greyscale colour values, so I could use it as a mask afterwards



Fig35

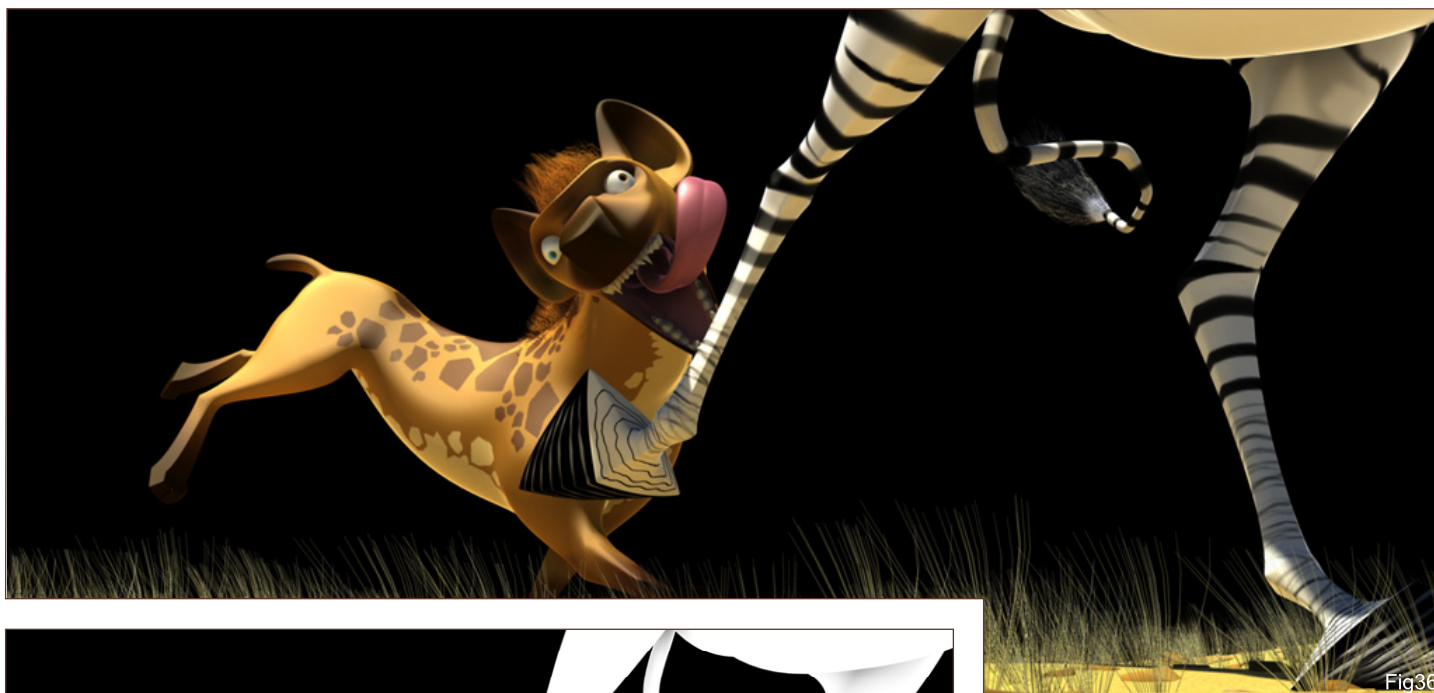


Fig36



Fig37

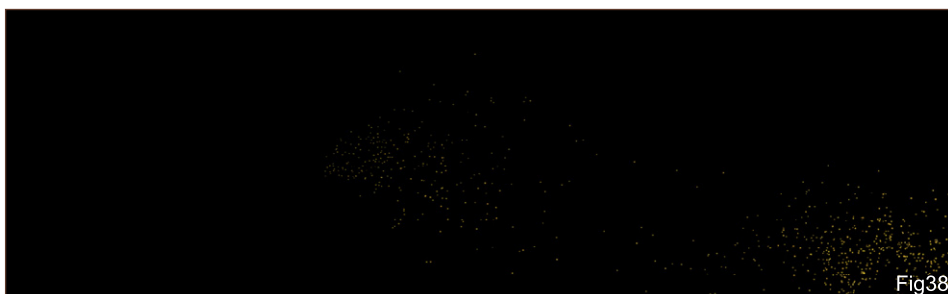


Fig38

(Fig37). And finally, 2 particles passes were made; one for the sand and the other for the dust (Fig38). Look out for the other scene elements, such as the matte shadow (rendered as black), in those 2 last passes (Fig39). I set some good anti-aliasing and final gathering values, and then rendered.

COMPOSITING & ADJUSTMENTS:

Merging the 4 render passes together wouldn't do the trick (Fig40), so I had to make adjustments if I wanted something 'homogeneous', which is something quite difficult to achieve directly from your 3D software. For once, compositing was done in Fusion. I set a background colour, merged my

4 passes, changed the dirt map pass colour, enhanced the particles a little (with grain, blur, erode, dilate and so on), added some motion blur and tweaked the whole “mess” (Fig41). Et voilà! (Fig42)

Final tip: Let the picture rest for a while (and you at the same time). Then take a quick glance back at it a couple of hours later, or even a day after. You’ll notice almost instantly what’s wrong with it and what works just fine. Some people mirror the picture to see it with fresh eyes, but you can do either. Trust me though, this is really helpful when you’ve been working for several hours on the same shot!

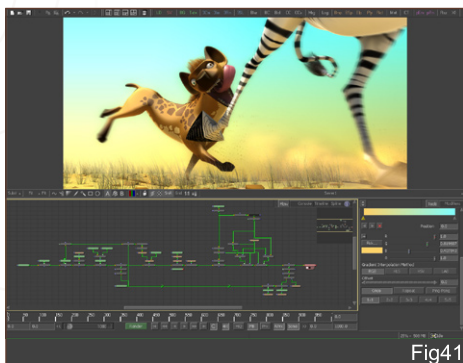


Fig41



Fig39



Fig40



Fig42

ALEXANDRE AILLET

You can contact the artist at:

alexandre_aillet@hotmail.com





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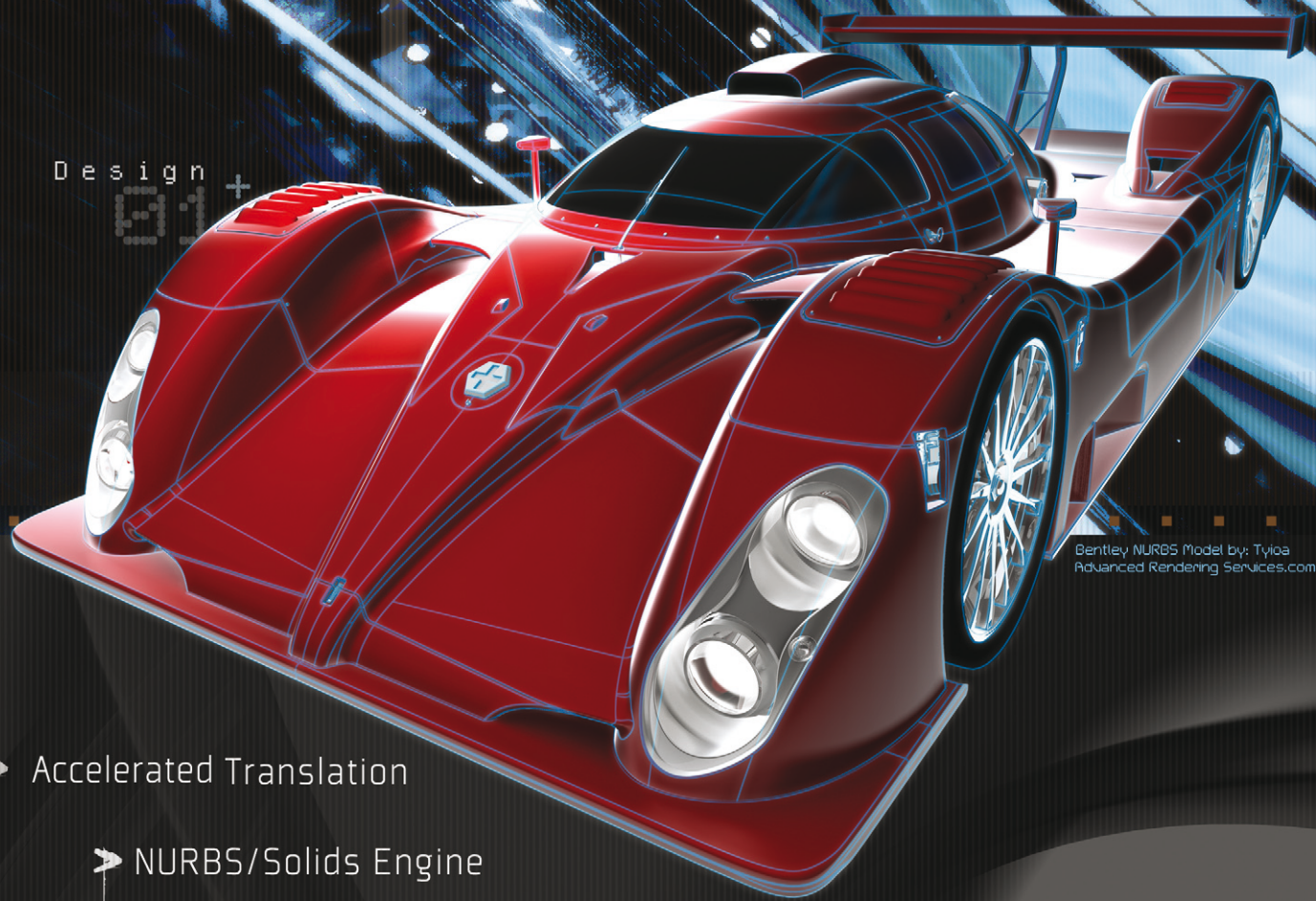
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3D environment lighting



3D Environment Lighting is a new 6 month tutorial series. Over the course of the next six months this series will be detailing techniques to lighting an environment under a number of different conditions. Each month will cover a step by step guide to setting up lights aimed at portraying the scene in a specific manner. The various tutorials will be tailored to specific software packages and each will aim to show a comprehensive and effective way of lighting an interior of a ship that includes both natural and artificial light. These will include a sunny afternoon, sunset, moonlight, electric light, candle light and finally a submerged submarine light.



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This Month :
**ARTIFICIAL INTERIOR LIGHTING
UNDERWATER**

JOAN OF ARC

complete character creation

Downloadable Tutorial EBook



SOFTIMAGE|XSI

These 120 plus page, Downloadable PDF's are designed for ease of use to help beginners and intermediate level of artist alike in the creation of a female character. The tutorial takes you through the process of modelling, texturing and mapping to finally adding bones.

Chapter 1: Modeling of the Body

- Body

Chapter 2: Modeling of the Head

- Head, Ear & Assembly

Chapter 3: Modeling of the Accessories

- The Sword & Armour Legs

Chapter 4: Modeling of the Accessories

- Armour Bust, Hair & Glove

Chapter 5: Modeling of the Accessories

- Accessories & UVW Mapping

Chapter 6: UVW Mapping

- Sword, Clothing, Armour & Body

Chapter 7: Texturing & Hair

- Eyes, Skin & Hair

Chapter 8: Bones & Skinning

- Bases, Hierarchy & Skinning

Introduction:

Michel Roger's famous 'Joan of Arc' tutorial re-written for Maya by Taylor Kingston, Cinema 4D by Giuseppe Guglielmucci & Nikki Bartucci, Lightwave by Vojislav Milanovich and Softimage by Luciano Iurino and 3DCreative Magazine.com.

If there has been one single tutorial that has educated and inspired more budding 3d artists than anything else, this complete step by step project by Michel's must be it. The community is in debt to him.



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CHARACTER CREATION: MAKING OF A NEXT GEN MONSTER

"WHEN MY LIGHTING MAP IS COMPLETE, I BRING IT INTO PHOTOSHOP AND PAINT OUT ANY PROBLEM AREAS SO THAT THERE ARE NO SHADING ERRORS..."

PART 2: TEXTURING BY GAVIN GOULDEN

Part 1

Covers Sculpting, Base Mesh, High-Poly & Low-Poly

Part 2

Covers Normal Map Generation, Texturing and Rendering the Character

The concluding part of this two-part tutorial on creating a character for next gen games by Gavin Goulden, takes you through adding the finishing touches to your model...

MINDFLAYER

CHARACTER CREATION: MAKING A NEXT GEN MONSTER PART 2 - TEXTURING

CREATED IN:

3ds Max & ZBrush

INTRODUCTION

This tutorial is intended to walk you through the texturing process of my latest personal project, the Mindflayer Bust, and to give you a better understanding of creating characters for next generation games. It was also show you the very basics of viewing your creation in a realtime model viewer.

UV LAYOUT

Without getting into the fine details of how to unwrap your model, as I assume you have the basic understanding of how to do this, I will touch on the main points of my process and some things to keep in mind.

I start by putting an "Unwrap UVW" modifier on my model and from there I take sections of the model that generally face in the same direction, and planar map them. Obviously this all changes based on different characters, but I'll generally have a few different sections that I have unwrapped (for example, the side of the head, face, top of the head, back of the head) and then stitch them together.

When laying out your UVs, have a checkered material applied to it with a sufficient amount of tiling. This will give you an idea of what areas are being stretched, or what areas are having more texture space dedicated to them. You'll want to keep the checkered square, and as close to the same size as possible throughout the entire model. Also, be very conscious about where you place your seams. You'll always

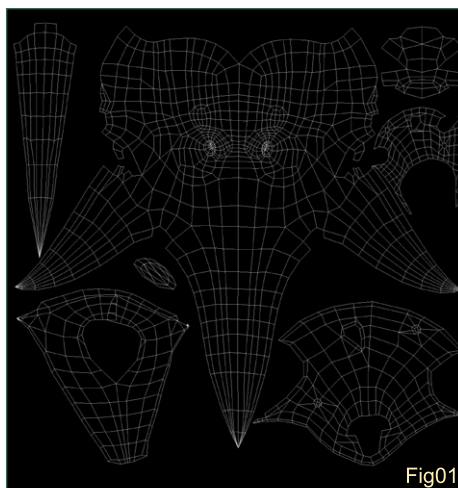
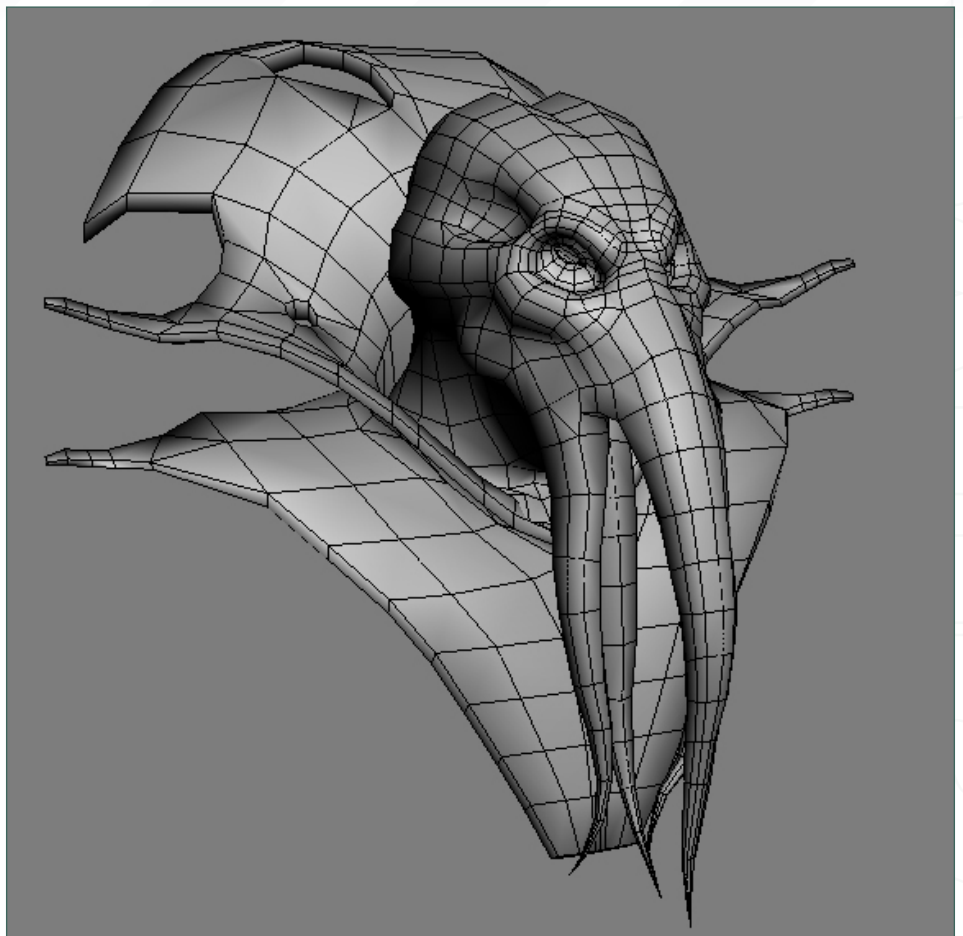


Fig01

want to try to hide them from plain site as they always seem to show. Take advantage of natural seams throughout your model (cuts in fabric, the collar of a shirt, and so on); if your model doesn't have any natural seams, like the Mindflayer's actual head, try to put them in places that aren't too obvious. I put my seams under the tentacles and at the back of the head - the places I assumed would be in view the least (Fig01).

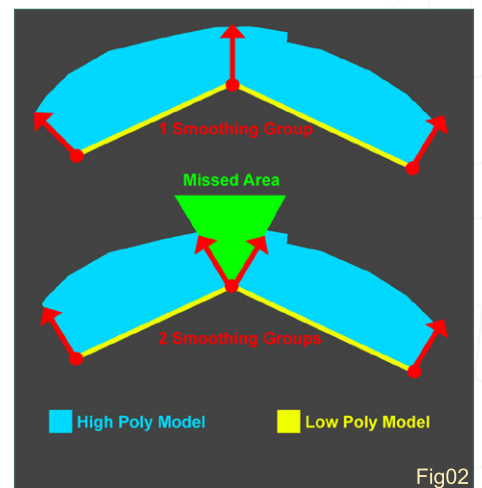


Fig02

BAKING MAPS

Before I put any colour on my characters, I first bake a normal map and a lighting map. First you'll want to import your model into your 3D application. Export your model from ZBrush as an OBJ and import it into Max. If the mesh is far too dense and you are having trouble working with the scene, you can put an "Optimize" modifier on your model to take out unnecessary

polygons and still retain the amount of detail you created in ZBrush (and the finer details that *are* lost would probably only hurt your normal map by making it muddy; these details are best added later in Photoshop using the nVidia filter). This generally makes the topology of your mesh quite ugly for deformation, but because all we'll ever want this mesh for is normal map generation, it works rather well, and since it doesn't cause your computer to hang as much, you'll work faster and more efficiently.

Once your low poly model and high poly model are imported into one scene, you'll want to make sure that your low poly mesh has only one smoothing group. Unlike old school game art, where smoothing groups helped define the model, smoothing groups can actually hurt the outcome of a next gen asset. When you create adjacent smoothing groups you are defining a hard edge between two faces. This causes the normals of those faces to shoot out at a 90

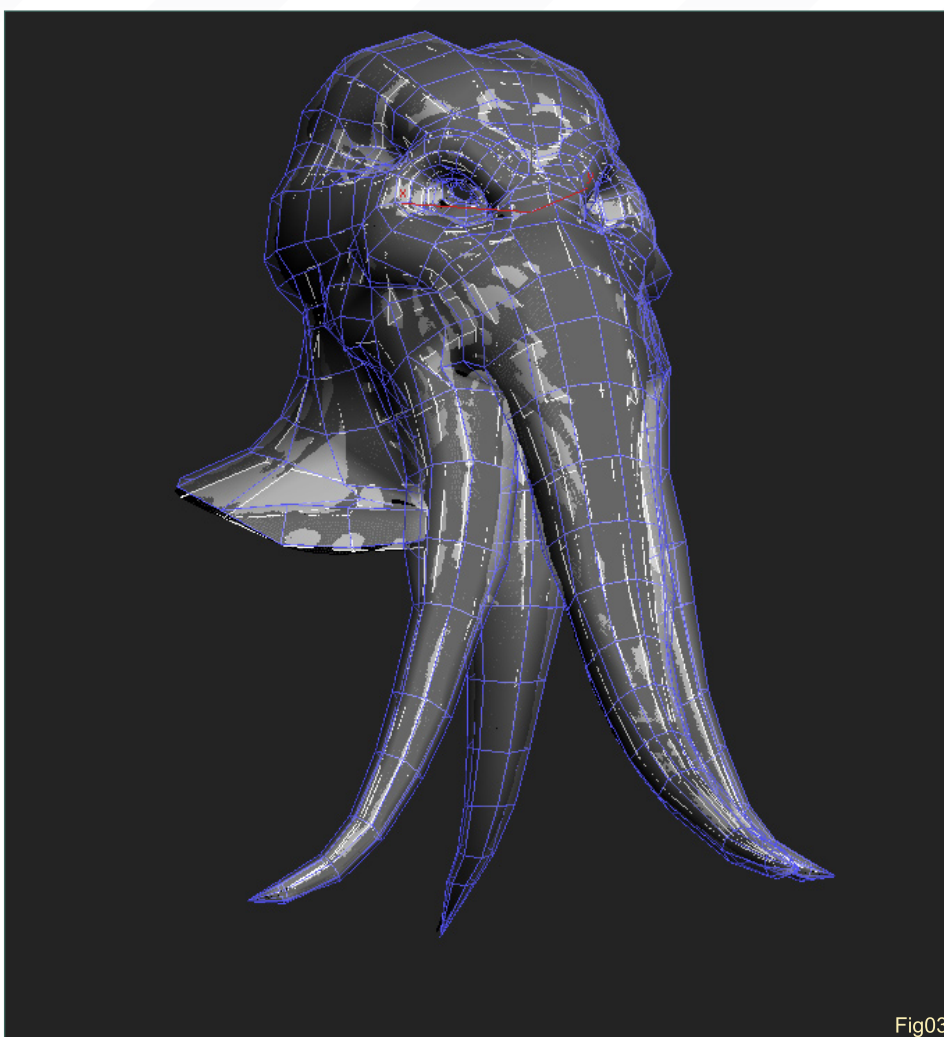


Fig03

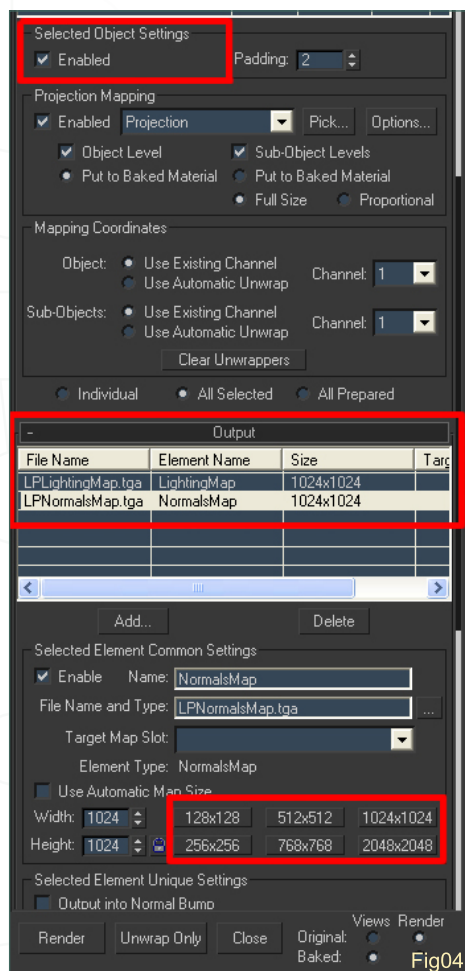


Fig04

degree angle. So when you attempt to grab information from a high poly mesh, the low poly mesh is actually missing a big gap of detail (Fig02).

After this, add a "Projection" modifier to your low poly mesh. Once this is applied, if you scroll down to the "Reference Geometry" tab and open it you will be able to select "Pick" or "Pick List" - this will tell your low poly mesh what the target high poly mesh will be to take information from. Depending on how many high poly meshes you have, you may want to use "Pick List" and select the appropriate models from there. In this case though, I selected the model in the viewport using the "Pick" option.

After a short while a blue cage will appear around your low poly mesh. Each vertex on the cage has a corresponding vertex on your low

poly model; you'll want to make sure that this cage encompasses all of the high poly model but at the same time try to keep it as tight to your high poly model as possible. Each point on the cage shows how far a ray will be cast from your low poly model. If the cage is far away from the high poly model, then there is a good chance that you will grab information you do not want, and the details that you do get in your normal map will be inaccurate.

If you look at the default cage Max has given you, it will probably be way too big. You may need to select all of the vertices and press "Reset" to put them back to their original position. Or, at the very least, select vertices that are obviously trouble areas and move them to a proper place. I usually reset the entire cage, select all of the vertices and "Push" them to a point where most vertices cover the high

poly mesh, and from there go to individual areas that need to be pulled out further and manually adjust them (Fig03).

You can enable "Shaded" in your cage's properties to help you see what parts of the cage your high poly model is intersecting. I also apply a very dark material to my high poly mesh and a light coloured material to my low poly mesh. I find that this helps me spot the trouble areas much easier.

Once you have your cage set up, it is time to bake your textures. It may take a few tries, as small intersecting areas can be hard to spot on the model... but they will show up as red spots on your texture. For a lighting map, you'll also want to throw a Sky light into your scene and enable "Light Tracer" in the Rendering > Advanced Lighting tab. I bake my textures in Max using "Render To Texture". The RTT menu will pop-up if you press 0 on your keyboard. Make sure the name and location that the file will be saved to is correct. Then make sure that "Projection Mapping" is enabled and that the correct map types are selected and given a proper size. From there, just hit render and wait for the magic to happen (Fig04 and 05).

You can see from my example that a few small problem areas came through. These can easily be painted out in Photoshop and aren't worth the time for a tweak and another render.

TEXTURE REFERENCES

Gathering texture references for the Mindflyer was straightforward, yet somewhat difficult. Because it is already an established character, there are tonnes of interpretations. I chose to go with a more blue/green skin, as shown in the RPG books and novel covers illustrated by Todd Lockwood.

BASE COLOURS: THE REAL FUN BEGINS...

When my lighting map is complete, I bring it into Photoshop and paint out any problem areas so

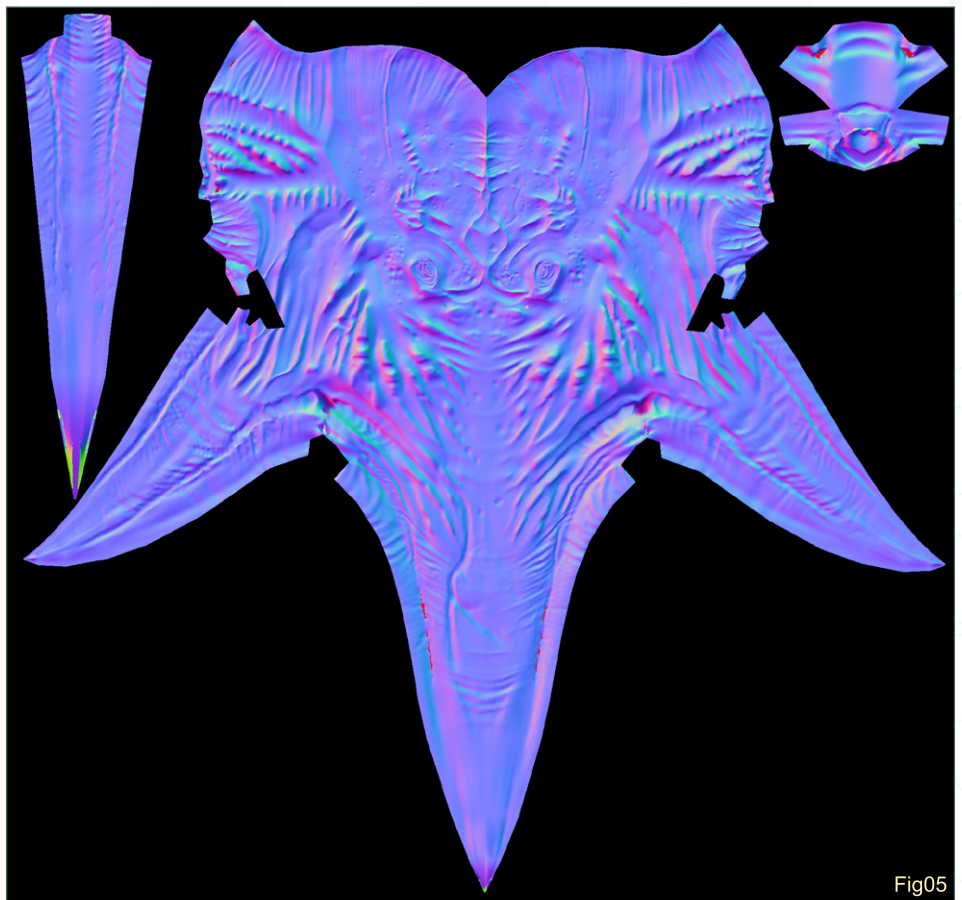


Fig05

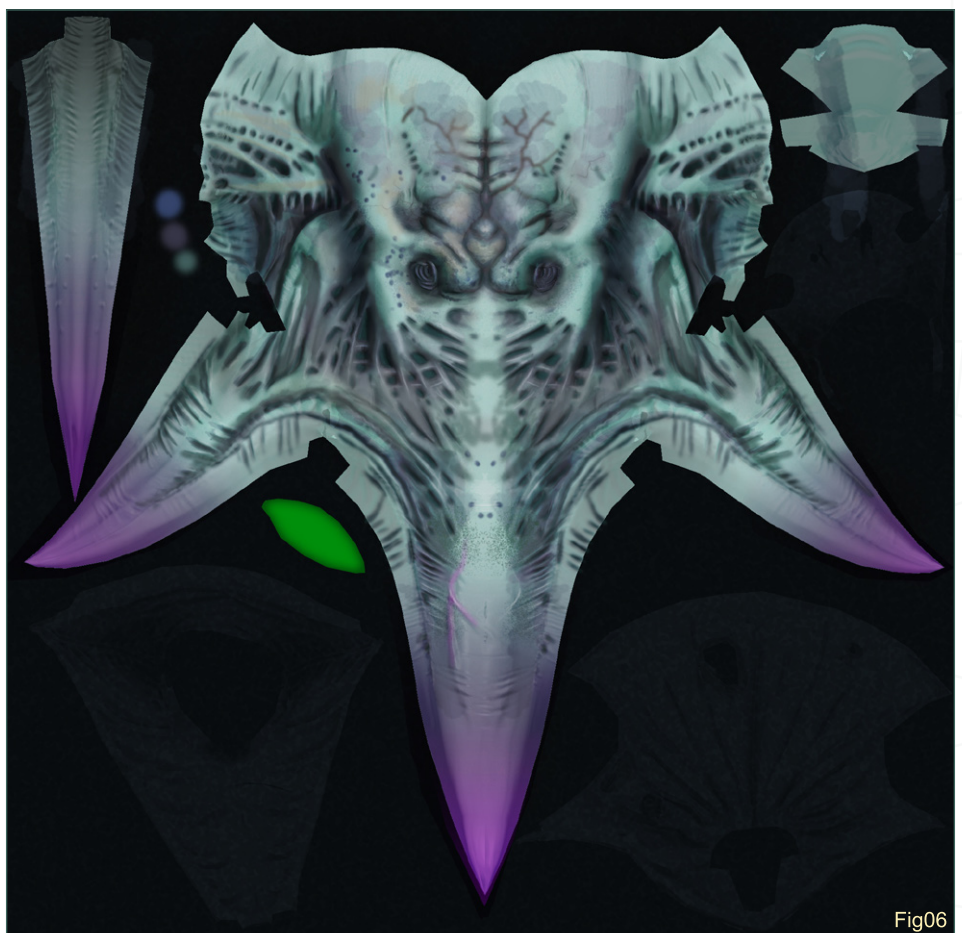


Fig06



Fig07

that there are no shading errors. I then create a layer underneath it and flood fill that new layer with the main skin colour that I would like to work with. In this case I went with a blue/green colour and set the lighting map to Overlay. Already you can start to see the texture take shape. Doing this clearly defines different areas of your model and helps you understand which parts will be lighter, darker, or another material altogether.

Once I am happy with my base colour I start to lighten and darken areas to give variation in the

skin. I also add different skin tones and touch on the details that would have a different colour.

In the example to the left (Fig06), you can see that I have coloured the tips on the tentacles, and have started adding in veins and colour variation around the eyes and other parts of the head. You can also see that I have darkened the areas in between the tendons and started adding highlights to make them 'pop'. I find this to be effective, but you need to be careful with how much lighting information you bake into your diffuse texture.

Next generation engines use normal maps and spec. maps to calculate lighting on your model; if you have too much lighting information baked into your model (shadows and highlights), this will cause a conflict in-game, resulting in odd shading. I try to add just enough to emphasise different parts of the model, and in this case I really wanted to push the brow/cheekbones and tentacles (Fig06).

DETAILS, DETAILS, DETAILS

Working off the base colours, I just kept refining and adding more polish. Using my lighting map

as a guide, I painted in the skin blemishes, and added finer details, like cracks in the skin. After all of that was done, I still wanted more... The good people at 3DTotal supplied me with the Alien Organics Total Textures CD (Volume 11); without this texture collection, painting all of the small details would have taken *much* longer. I used a combination of textures that 3DTotal provided, and they worked perfectly. Practically no modification was needed - I just set them

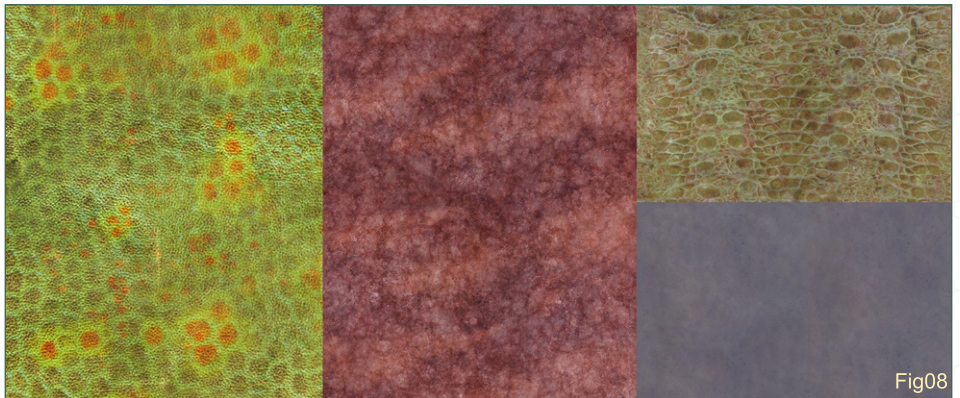


Fig08

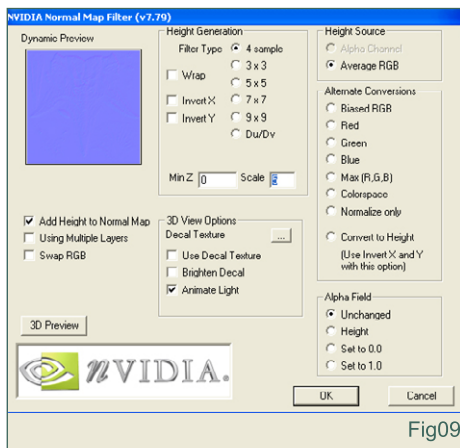


Fig09

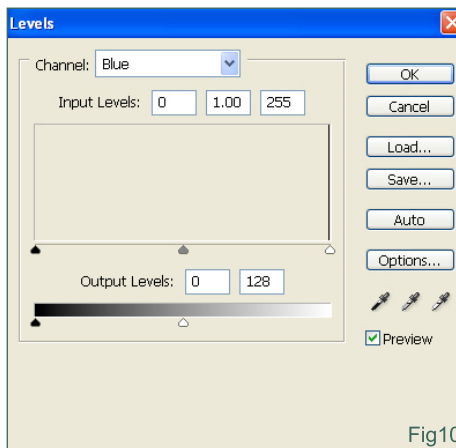


Fig10

to a very low opacity, to help break up the skin and to give colour variation. Using a feathered brush, I erased some of the overlays to make them lose their repetitive look. I used the same technique for the cloak; using a base dark grey colour, I used some purple colours and details with the 3DTotal Textures to give it variation. I wanted to make different parts of the material 'pop out', because I felt that the different layers towards the shoulder were getting lost. To do this, I drew where I wanted "laces" to be, and made grommets for them to go into. Using the grommets would also allow me to break up the surface in the spec. map, since the grommets would have a very tight shine and the cloak would have a general gloss, like oiled leather (Fig07 and 08).

EXTRA NORMAL MAP DETAILS

Trying to get fine details generated in a normal map using the Projection modifier in Max (or any other program for that matter), can be difficult. Depending on how large the textures are that you can use, these details can actually harm your final product. You'll want to focus on the bigger details when generating a normal map in 3D, and rely on Photoshop for the finer details.

To do this, I start by taking a desaturated version of my diffuse and run the nVidia filter on it using the settings as detailed in Fig09. Depending on your texture, it may be a good idea to do this in layers, as sometimes the diffuse colour doesn't accurately represent the normal map detail for the object. For example,



Fig11

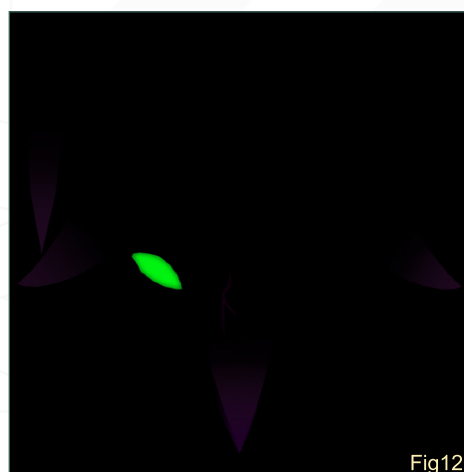


Fig12

if you have buttons or clasps on your texture and they are painted black, then they will appear to go "in" when converted to a normal map. Assuming you don't want this, you'll want to take the layer with these details and adjust them to a greyscale value that will be represented better in a normal map. Just keep in mind that 128 grey is neutral, black is "in", and white is "out". Once you do that, merge all of your layers together and run the nVidia normal map filter.

After you do this you'll notice something: all of your awesome normal map information is gone! Not to worry though, as you can set this layer to Overlay and just make it add to the pre-existing normal map. You'll notice that you still lose some of your details, so to fix this go to Adjustments > Levels > Channel: Blue, and set the Output Level to 0/128 (Fig10).

CREATING A SPEC. MAP

The spec. map can make or break your model. Too much with no variation and you get the infamous "plastic look"; too little and your texture looks bland. I start by getting my diffuse texture, duplicating it, desaturating it, adjusting the brightness/contrast, and setting it to Multiply. After this, if the engine supports it, I will add colours to where different materials would be. This makes the lighting more believable, as it's very rare to have anything shine in perfect white. Basically, I want the skin to be a dark grey and have brighter spots that would naturally have more shine. On humans, this



Fig13

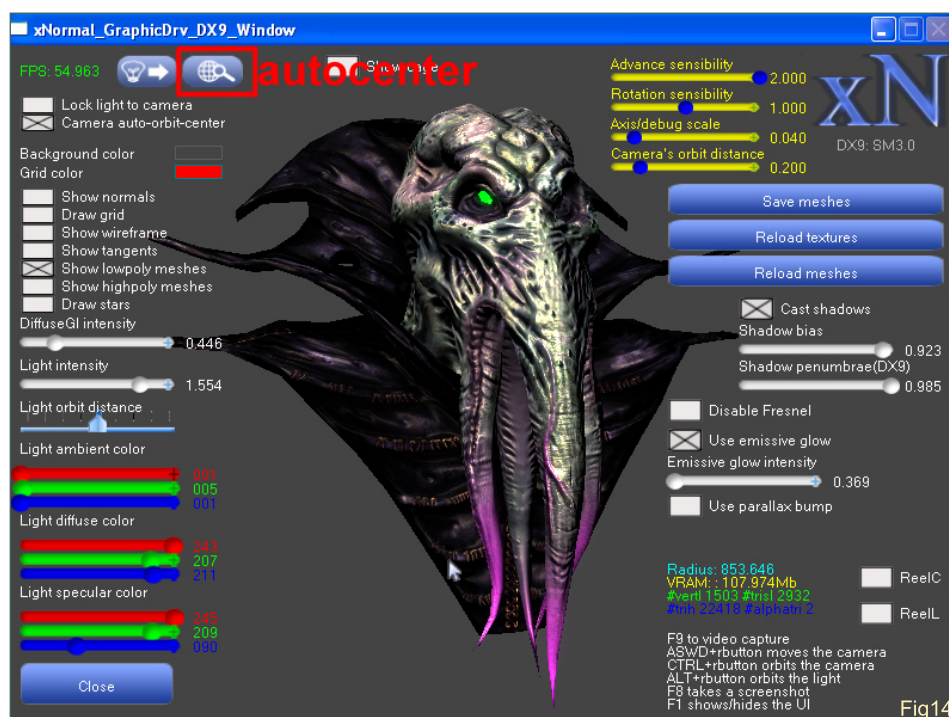


Fig14

usually includes the forehead, nose and chin. On the Mindflyer, this is a bit different because of it's anatomy and skin type. I wanted it to look wet, but still wanted to have some variations to make the spec. map more dynamic. Much like I mentioned about the normal map before, you'll want to do this in layers. Most of it can be done with the above method, but some parts will need individual attention (Fig11).

CREATING AN EMISSIVE MAP

Creating an emissive texture is fairly straight forward, assuming that the areas that you want to glow have been painted on a separate layer. If not, no worries: some quick selection work can isolate the area. I start by making a black texture the same size as my diffuse, and then simply Shift and drag the layers from my diffuse

texture that I want to "glow" onto this black texture. Once I have my new coloured layers, I play with the opacity until it is at a level I like. It takes some trial and error as you may not want everything to be full bright.

For the Mindflyer, I only wanted his eyes and the tips of the tentacles to glow. You can see from the texture below that the eye area is much stronger than the tentacle areas. This is because I only wanted the tips of the tentacles to have a subtle glow to them. This texture can usually be scaled down lower than your other maps, as there is usually very little detail to them (Fig12).

SETTING UP YOUR MATERIAL

Max:

Setting up materials in Max for a next gen character is fairly simple. Open your material

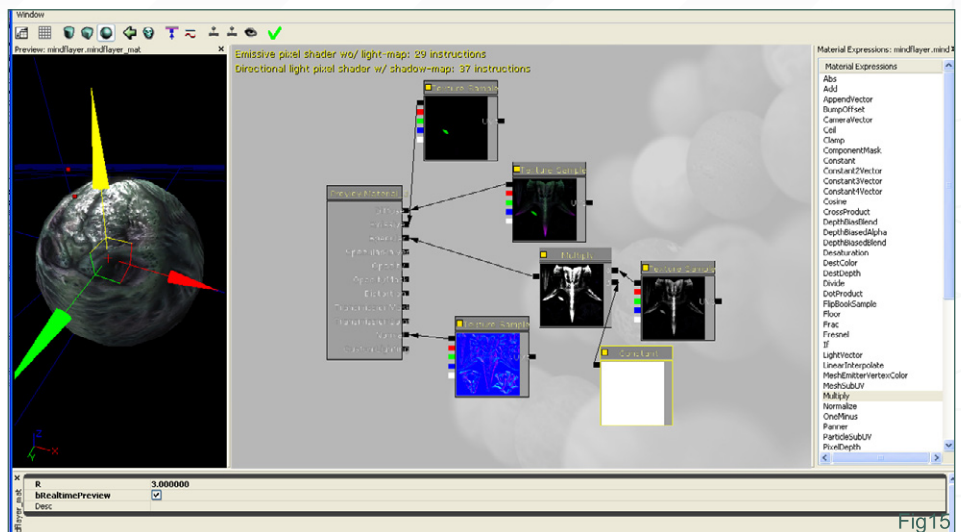


Fig15

editor, click on a clean shader ball and look for the "Maps" tab. Click on the tab and put the appropriate maps where they belong (diffuse = diffuse texture; Spec Colour/Spec Level = Spec Map; Self-Illumination = Emissive, and so on). Simply choose "Bitmap" and then your image. For normal maps, select "Bump", then choose

"Normal Bump", "Bitmap", and then finally the normal map image you'll be using.

xNormal:

xNormal is a great application created by Santiago Orgaz for not only baking textures, but also viewing models. Using the xNormal model viewer, the results will resemble what

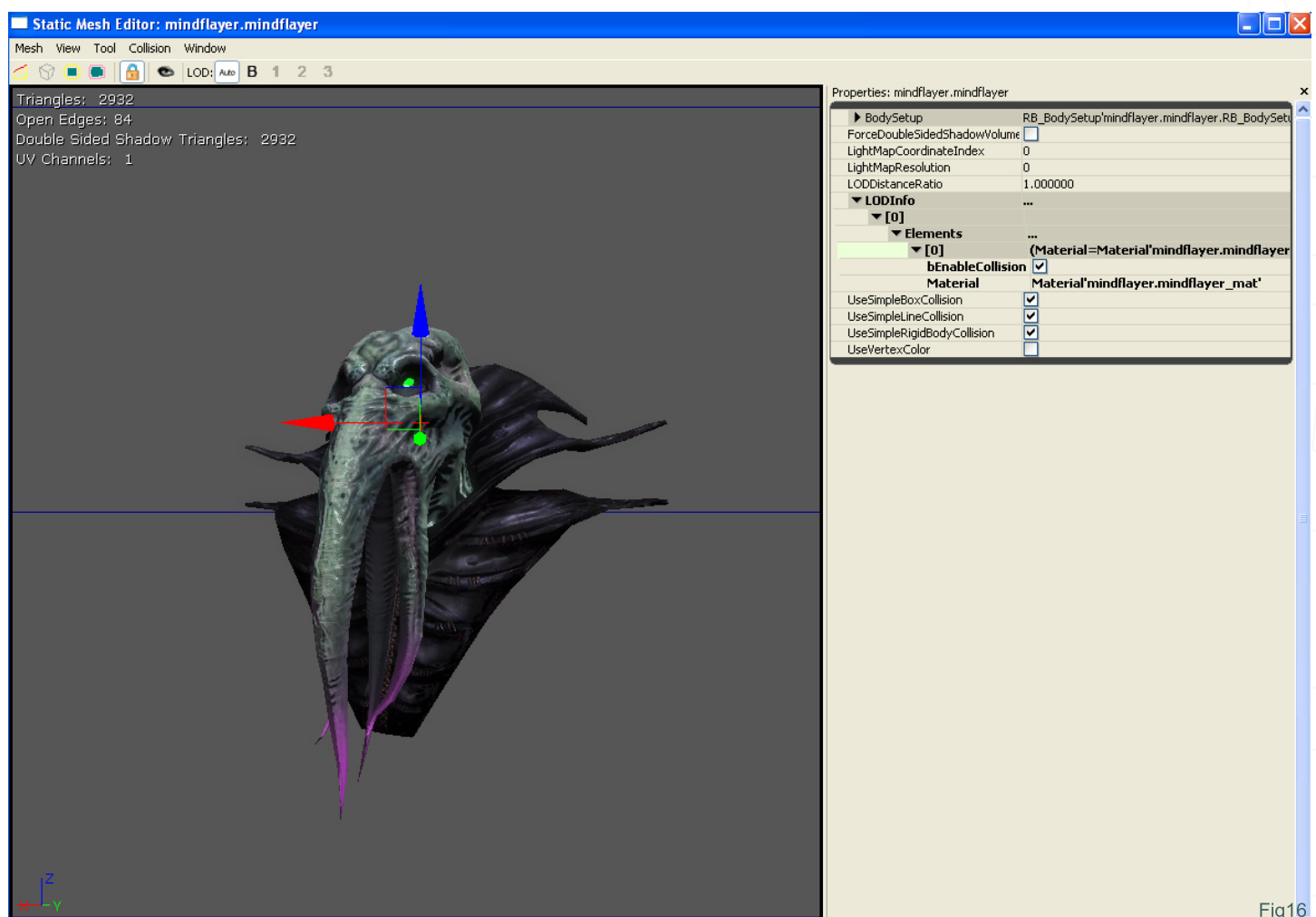


Fig16



Fig17

your model will look like in-game much better than Max will. Best of all - it's free! Not just for personal use, but for commercial use, too. For tutorials, information and downloads please visit www.xnormal.net.

Setting up models and textures in xNormal is easy. Under the "Low definition meshes" tab, click on an empty entry box and find your low poly mesh. Once this is loaded up, go to the "3d Viewer" tab. Everything here is pretty straightforward: just put the appropriate textures where they belong (Base Texture = Diffuse; NormDisp Texture = Normal Map; Emissive Texture = Emissive; Specular Texture = Specular... (there is also support for other textures, but for this example I am just using the ones I have been using in Max)).

Once all of these are loaded, click on "Launch Viewer." After a short while, the model viewer will appear with your low poly model fully

textured. Using the on screen directions, you can navigate around your model and also change the lighting setup and properties. xNormal saves the last camera position you had when you exit the program, so be sure to click the "Autocenter" button if you are having trouble finding your model in the viewer (Fig13 and 14).

As a side note, if you are having trouble displaying models or textures, by using xNormal's plug-in manager you can change display modes from OpenGL to Direct3d. Personally, I have not experienced any problems regarding display, but these issues have been reported.

Roboblitz/Unreal:

Roboblitz gives you access to a version of the Unreal editor and is very cheap. If you've got a few bucks to spare, I recommend downloading Roboblitz and at the very least give the tools a look.

Getting a basic test level made is easy. Right-click on the cube icon and enter the dimensions. Click Build. To the left, click the Add button (or press Ctrl + A). Right-click over the top face of your cube and add a PlayerStart Actor, otherwise the game won't run. You can also add lights to your scene in the same way, by adding a Point light (or various other light types) actor. By right-clicking the selected light, you can access its properties by going to Pointlight_Properties.

Export your model as an ASE with the "Mesh Definition", "Materials", all of the "Mesh Options", and "Geometric" boxes checked. Open the editor and in the "Generic" window, click File > Import and locate your ASE. Give it a name that makes it easy to identify, and then press OK. Now select your package in the left hand menu and it should appear on the right with no textures. To get textures on our model, we'll need to import them. Right-click your

package and then click Import. Bring in all of your textures, with the compression set to TC_Default, excluding your normal map which will be set to TC_Normalmap.

Now that all of your textures are in, we'll need to set up a material for them. Anyone who has worked with shader trees in 3D applications will find this very familiar. Right-click on a blank part of the "Generic" menu and select "New Material". After entering a proper name, the material editor will open up. It should show a blank shader ball. Each texture will need to be handled separately. So, with your texture selected in the "Generic" window, click and drag "Texture Sample" from the right menu onto the shader tree area. Do this for all of your textures. After this we need to connect the textures to the material itself. It's fairly straightforward: Diffuse goes to Diffuse, Normal goes to Normal... just click on the black node and drag it to the appropriate place. If you want to give your specular a little more "pop", click and drag "Constant" and "Multiply" onto the shader tree. Connect your specular texture into A of Multiply and connect constant into B. Now connect Multiply to Specular on the material. Make sure that all of your textures have little yellow squares in the top left corner, as this shows that they are visible. Now, if you click on Constant you should see its properties appear at the bottom of the screen. Put a number greater than 1 into the R value box and you should be able to see the changes instantly on your shader ball, and in the resulting Multiply node that combines your specular texture and this constant node's value. I've set mine to 3 (Fig15).

Go back to the "Generic" window and double-click your model. This will bring up the Static Mesh Editor. Your model will still be untextured, but if you click on the menu to the right and navigate to the LODInfo section, there will be a section to enter the location of your material. If your material is selected in the Generic window, you can simply click the green

arrow beside the entry field that automatically puts the current selection as the material. Your model should now appear textured in all of its glory (Fig16).

Now go back to the level editor and make sure that your mesh is selected in the Generic window. Right-click over the top face of your cube, just like you did for the PlayerStart and Light, and select Add Actor > Add Static Mesh: Name of your mesh. As soon as you do this, it will place your mesh in the "level". You can scale, rotate and translate your model around the level. Switch between these modes simply by pressing the Space bar (the gizmo will change to show which mode you are currently on). After your mesh is placed properly, click the "Build All" icon at the top of the screen (the cube icon with the light bulb). Once the build is finished, select the joystick icon, "Play...". Shortly after, your level should load and you will be able to cruise around your model (Fig17).

GAVIN GOULDEN

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COMPLETE GUIDE TO LIGHTING

PART 7: PRODUCT SHOT LIGHTING

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PRODUCT PHOTOGRAPHY

Good photographers can better demonstrate their knowledge of shading by portraying simple subjects. With aesthetically pleasing elements, it's easy to get nice results. Attractive results are not as easy to get with simple subjects. The eye can be distracted by the elegance of the form, and take away attention from the interaction of light and shade. Therefore, average subjects are more challenging to portray. With them, viewers can pay more attention to how light plays in the shot, and not how beautiful the form of the subject is by itself (Fig01 - 03).

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Fig03: It's easier to portray an already beautiful subject...

©iStockphoto.com/Marcelo Wain



Fig01

©iStockphoto.com/Timur Suleymanov



Fig02

Common subjects lack glamour in their shapes. They have been simplified by product design over years. While their shapes allow the viewer to focus more on how light interacts with them, they are normally viewed under common lighting scenarios. Placing these simplified subjects inside an elegant lighting setup can make the viewer realise the beauty that lies underneath the design of a product (Fig04).

Good photographers like challenges, and therefore many of them try to make the ordinary look extraordinary. It is this capacity which distinguishes the act of taking a picture, from the art of portraying with pictures.

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Fig04: Photographers can make average subjects look interesting.

PLANNING

It is always good to know what we want from a picture before we take it. Whilst it is fun to play and get unexpected results, it is of little use when you need to attain a specific look and/or feel for a client. The same happens with 3D that has to be integrated into a background. Lighting has already been defined by the shot - it is your duty to replicate it, so that all of the elements merge seamlessly. Both situations require planning, and the better you know what you want to achieve, the better your results will be.

EXECUTING

Emulating realistic lighting in 3D requires a good amount of technical knowledge. However, it mostly requires a keen eye and good observational skills, as these are the ones that will prevent your brain from taking control, making you want to use the most amount of features in the search of the perfect picture. Let your eyes be your guide (Fig05).

Product shot design requires a high level of understanding of light behaviour. The creator requires a wider perspective of how light interacts with its surroundings. Furthermore, product shots require for you to design lighting. For such design to be successful inside 3D,

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Fig05: Trust your eyes more than your brain

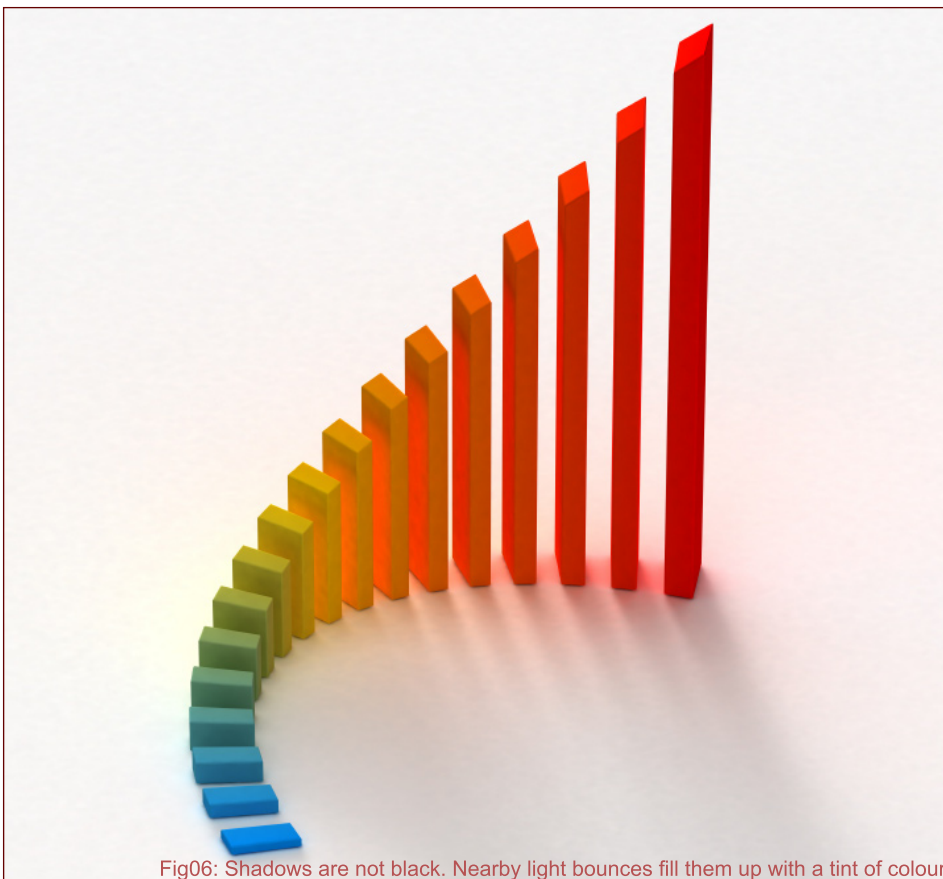


Fig06: Shadows are not black. Nearby light bounces fill them up with a tint of colour

it should also be successful in the real world. Let's try to understand more about shadow and light before we get deeper into the technical aspect of producing a product shot inside LightWave.

REAL LIFE SHADOWS

The successful emulation of realism is heavily dependent upon the shadow quality produced by the 3D lighting and rendering tools. Shadows are not "created", they are the occlusion of light - a surface that is not receiving as much light as the object blocking it. Where there is light reaching a surface, there is normally a shadow behind. However, light in the real world can reach the most intricate corners and angles. This "filling" light reaches the shadows directly from its light source, and indirectly from the same or other light sources. As a result, real life shadows are never completely dark; they are also filled with light, just with less intensity than the main rays of light hitting the surface that projects them. These shadows also have colour. These colours are normally less saturated than the colours from the main light (Fig06).

COMPUTER GRAPHIC SHADOWS

There are two main types of shadows in the CG world: Shadow Maps and Raytrace Shadows. Shadow Maps render fast, but can't match up with the accuracy of Raytrace Shadows. For this reason, Raytrace Shadows are more popular.

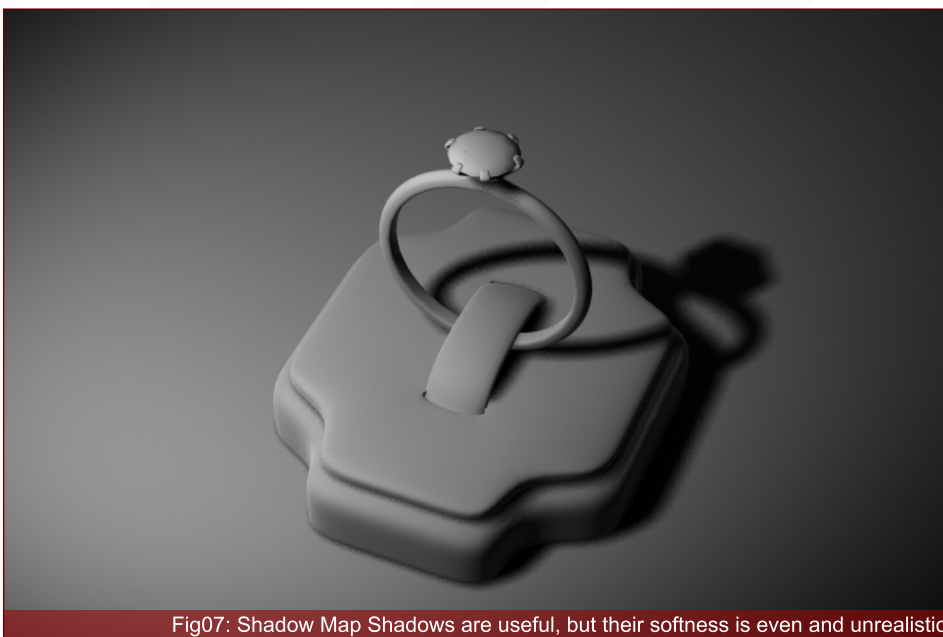


Fig07: Shadow Map Shadows are useful, but their softness is even and unrealistic

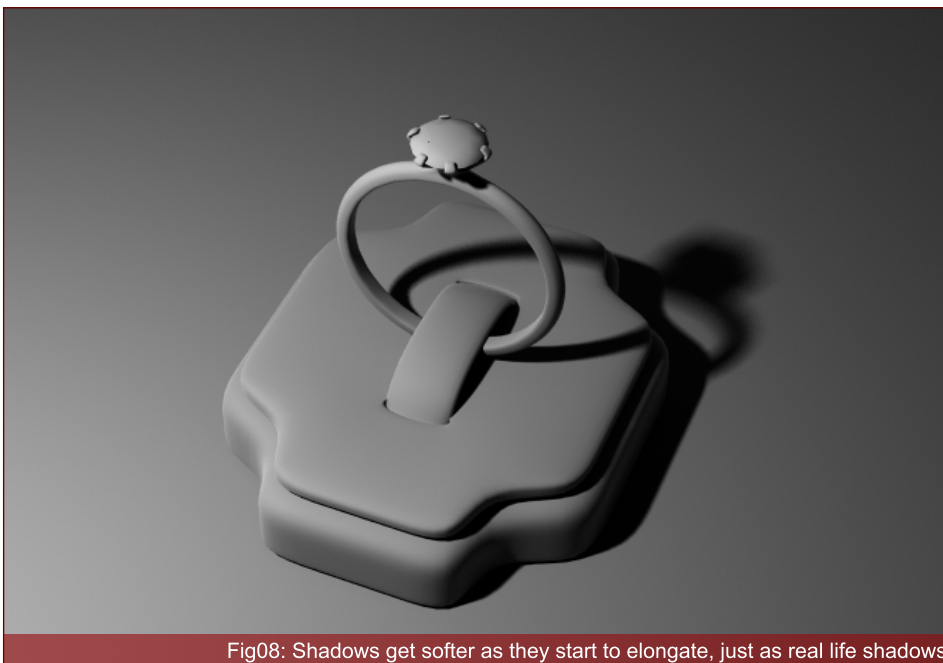


Fig08: Shadows get softer as they start to elongate, just as real life shadows



Fig09: Pink tones, soft shadows and elegant reflections are used to pitch this product to a feminine audience. A blurred picture of a woman's room was used as a background.

The most accurate tool is your own observation. Make use of it! A person that observes their environment can achieve great results without the need of the latest software package. A person with the latest software package will most likely trust his tools rather than his own observation. Tools are there to help you attain results. The viewer will not care about the software package used. The viewer cares about the image produced. If you can make better and faster working shadows with a strange and bizarre technique, then go for it!

LIGHTWAVE SHADOWS

Both Shadow Maps and Raytrace Shadows are available in LightWave. Shadow Maps can produce soft shadows, but the resulting softness will be even. The shadow will be soft on all of its edges. Real shadows are sharper

at the origin of the object producing the occlusion, and get more fuzzy as the shadow elongates on the surface in which it is being projected. You can't attain this effect with static Shadow Maps. However, they come in handy when the camera shot will not include the origin of the shadow. Shadow Maps can be combined along Spinning Light tricks to produce lighting results, such as that one produced by backdrop radiosity (Fig07 and 08).

Raytrace evaluation in LightWave is very accurate. The fuzziness of the shadows produced is very close to that of real life shadows. This single aspect makes the LightWave render engine extremely powerful, and this is a good reason why it is used for integrating CG elements into real life shots.

PRODUCT SHOTS

Product shots are portraits of scenes with objects. These images normally express a specific "feeling" on purpose. This "feeling" is designed by a company or an agency, etc. Their main goal is to communicate an emotion and/or message that will attract a specific audience (Fig09).

When the physical qualities of a product are not enough, then other means are necessary to add further value to a product, such as light, shadow, composition and colour. The power of such feeling needs to be instantaneous. It requires the power of communicating that which takes a long time to express with words. Viewers see product shots everyday; therefore, product shots need to be wisely designed to get the attention of the viewer. Great product shots are those which are not only observed, but also remembered (Fig10).

PRODUCT SHOT SHADOWS

Shadows change depending on the environment. Product shot environments are, most of the time, highly designed. The position of elements is carefully planned when a shoot is going to take place. Even objects outside the



Fig10: 3D product shots allows you to create "visual impossibilities" which will be remembered by the viewer.

camera frame are positioned accordingly. Such positioning may affect the way that light behaves and bounces, how reflections are created, and so on. Therefore, shadows are planned inside a studio shot, if you're a good photographer (Fig11).

Photographers can select specific light types to produce specific results. Products can also be shot in exterior locations. In such scenarios, the sun and the moon act as the main light sources. Even then, reflective surfaces are used to bounce back part of that light and

further illuminate the subject being portrayed. These gadgets are normally called “bouncers”, due to their ability to bounce light. Product shot shadows are normally highly designed, due to the amount of gadgets that are used to create specific lighting results for the camera (Fig12).

CG PRODUCT SHOT SHADOWS

Product shots normally demand a realistic look. A realistic look can be achieved by creating realistic shadows. Realistic 3D shadows can be produced by using 3D light sources that behave similar to real life product shot lighting setups.

There are many ways to replicate real life studio gadgets in 3D. Real life lights have a volume: width, height, depth. These properties can be emulated in 3D, since most 3D applications allow the use of luminous objects. This is one of the most accurate methods of emulating real life lighting in 3D (Fig13).

However, such solutions are render intensive. They involve the use of radiosity to produce lighting. As a result, these solutions work great for single “beauty” shots, but are not very convenient if you want to create complete animations. However, there are other ways



Fig13: You can use luminous objects to create very realistic shadows.



Fig11: Product shots lighting could be highly designed



Fig12

to create great product shot renders. For example, you can replicate real lighting gadgets using 2D lights and surfaces in order to produce convincing results (Fig14).

THE KEY TO PRODUCT SHOT REALISM

The most important shadows of realistic product shots do not come from the replication of real life lighting devices. Let's further explain this concept, which is in essence the most important fact about realistic 3D product shots...

Before a photographer puts lights into a scenario and turns them on, is there any light inside the room? It is most probable that there is some light in such a scene. Real life lighting is soft, and commonly comes from a distant window, a door, or from another room. There is always a little bit of natural light in studios. This light is not created by any photographic gadgets - it's already in the scene! Such things do not happen in the 3D

world, however. All light should be created from scratch! When you open a 3D application, there is normally no light at all.

This already existent soft lighting gives volume to objects. Replicating it in 3D will also give volume and realism to your products. So before you start adding Key lights, Fill lights and Rim lights - think again! You may just be missing the most important lighting source!

REAL LIFE REFLECTIONS

All surfaces reflect light. Each surface reflects light differently. As a result, there are many types of reflections. Hard surfaces bounce light in a uniform way, producing reflections in which the light source is recognisable. Softer surfaces produce less recognisable reflections. However, all surfaces reflect light and therefore produce reflections (Fig15 - 18).

COMPUTER GRAPHIC REFLECTIONS

Most 3D applications associate "reflections" when a highly polished surface bounces light, such as with mirrors. For this reason, pushing the "reflections" button on 3D applications will not allow you to reproduce all of the different types of reflections that would happen in the real world (Fig19).

Learning real lighting behaviour can allow you to recognise which reflection types and properties



Fig14: Modelling lights can help you attain believable light bounces and proper reflections.



Fig16

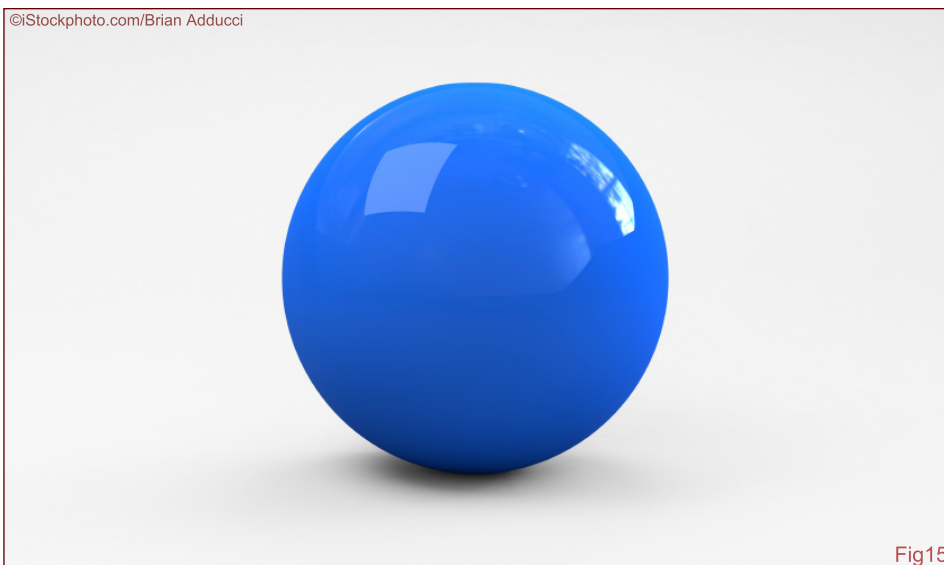


Fig15

are produced by different 3D tools. As a result, you will be able to combine these tools and emulate real life reflections.

LIGHTWAVE REFLECTIONS

LightWave has a good tool set to emulate most types of reflections. Inside it, reflections are manipulated by tweaking the surfacing and rendering parameters of lights, scenes, objects and surfaces.

PRODUCT SHOT REFLECTIONS

Most product shots are created with brand new objects. For this reason, their reflections are normally perfect in form. Such as with shadows, reflections are also influenced by the location of the light sources (Fig20).

CG PRODUCT SHOT REFLECTIONS

In 3D, it is possible to separate the position of reflections from the position of the light source. With it, more visual styles other than realism can be achieved. However, this capability should be carefully exploited if a realistic image is to be produced. Reality has a predefined domain in which light follows specific rules. Ignoring these rules and patterns will result in renders which



Fig20: You can decipher lighting setups by closely watching the reflections...

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Fig17

©iStockphoto.com/Steve Dibblee



Fig18: All surfaces and objects reflect light, and are therefore visible...

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Fig19: Pushing the reflection button will not allow you to create all types of reflections.

probably showcase an awkward relationship between light and reflection. **Remember:** your eye has been trained already for years, and even if you don't know 3D, you may be able to "feel" when something is not correct about a render.

Good photographers like challenges, in which the viewer will pay attention to how light behaves. Such portraits require technical and aesthetic design in order to produce satisfactory results. It is important to know how product

shots are taken in the real world in order to reproduce such methodology in the 3D world. This is what defines a picture from a portrait, such as a render from a real product shot.

CESAR ALEJANDRO MONTERO OROZCO

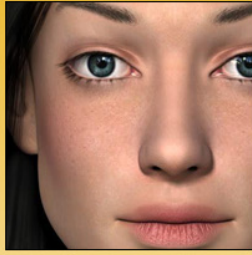
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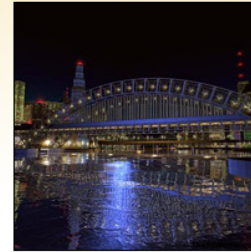
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“EVEN WITH SOME MESSING AROUND, THIS IMAGE IS NEVER GOING TO LOOK BELIEVABLE WITH THIS SHADER, SO RATHER THAN MESS AROUND FOR EONS WITH IT TO FIND THE HOLY GRAIL OF ZBRUSH SHADERS...”

Part 1 of this 2-part tutorial by Wayne Pobson, takes us through some very effective ways to improve and composite an image...

Not a post

POST PRODUCTION

PART 1

CREATED IN:

ZBrush 3.1 and Photoshop CS3

In this 2-part series, I'll be showing you some simple, but effective ways to improve and composite an image. Although the application of choice in this case is ZBrush 3.1, the theory is sound for any application. Many of you will already be familiar to some degree with simple compositing passes, such as diffuse, specular, ambient occlusion and so on, but sometimes we forget when relying on an application's default 'render pass options' that we do not need not be limited to the options it gives us, and can indeed invent our own passes to help us produce an image that we love!

In this part, I'll show you how I go about deciding and implementing the different shader passes in

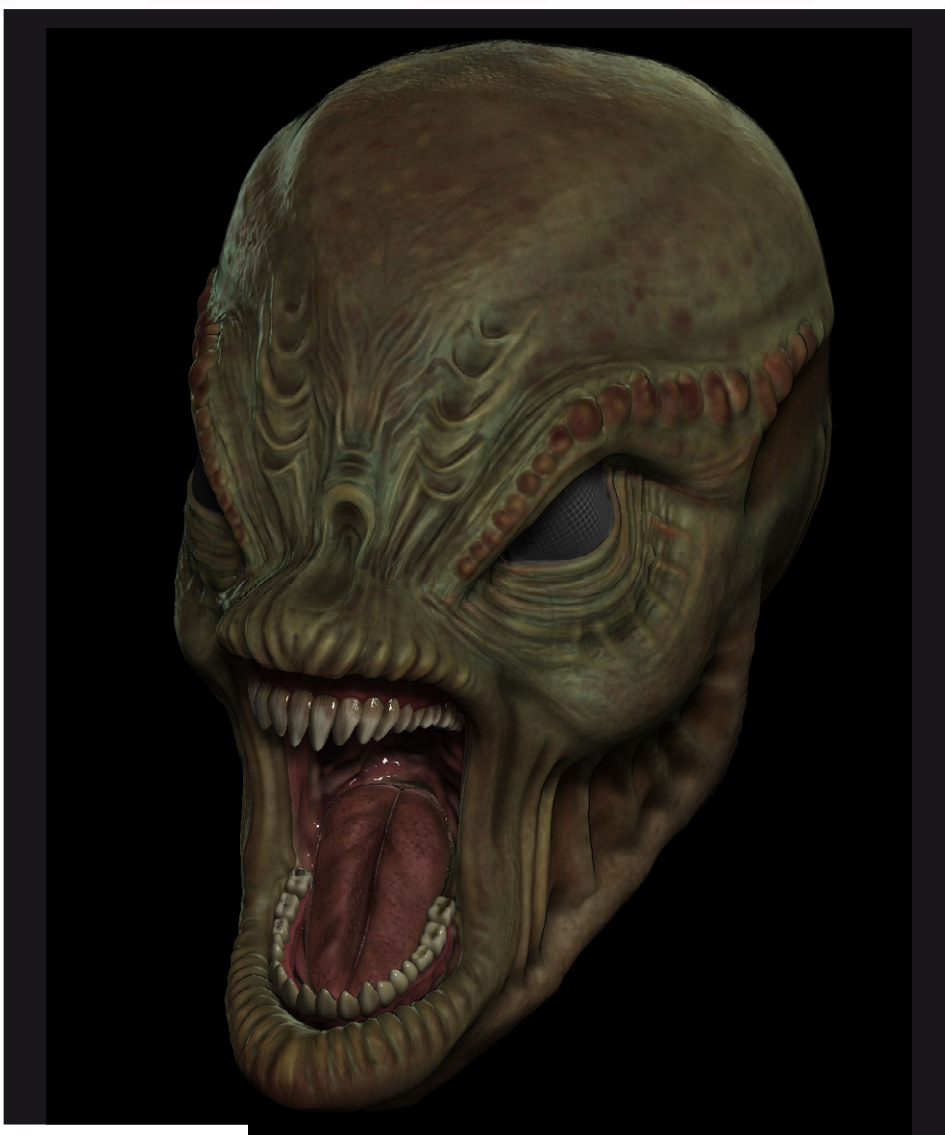


Fig01

ZBrush, and in part 2 I'll show you how I put these together to produce the final image. But first of all, let me show you the image that we will use as our colour base: Fig01.

Even with some messing around, this image is never going to look believable with this shader, so rather than mess around for eons with it to find the 'holy grail' of ZBrush shaders, we'll use a number of them for later compositing to produce what we require faster.

THE PROCESS

Ambient Occlusion Pass:

We are going to need a couple of shaders for this work flow; firstly we are going to need a number of specular passes (with varying amounts of specularity), a couple of beauty passes that are as close as we can get in a short time in ZBrush, and an ambient occlusion pass. The one that gives us the most trouble is the ambient occlusion pass. This is due to



Fig02

the fact that, whilst there are ways to fake it with cavity maps using ZMapper, or painting a cavity map using the cavity masking brush options, they do not do the job that we require in this particular case.

So, we have to find a way around this which is good for us. There are two options: firstly generate a 16-bit displacement map and convert this to an ambient occlusion map using the free program xNormal; or the way I prefer to do it is to use a rather nice shader which can be found on ZBrush Central, called 'green clay' (created by Ralph Stumpf). With some tweaking in Photoshop, it can produce a fantastic directional ambient occlusion pass (Fig02).

The Matte Pass:

This is a simple one and the quickest of all the passes to produce. As a rule, unless your image is a 'standalone piece', as this one is, you'll need a matte pass to provide you with a black and white image that we can use, in case we want to isolate our final render so that we can add a more interesting background. To do this, simply check that your texture is not showing, by going the texture section of your tools menu and making sure 'Colorize' is not highlighted.

Now make sure the colour in your main colour chip in ZBrush is white, go to the rendering menu and click the 'flat' button. This will show only the

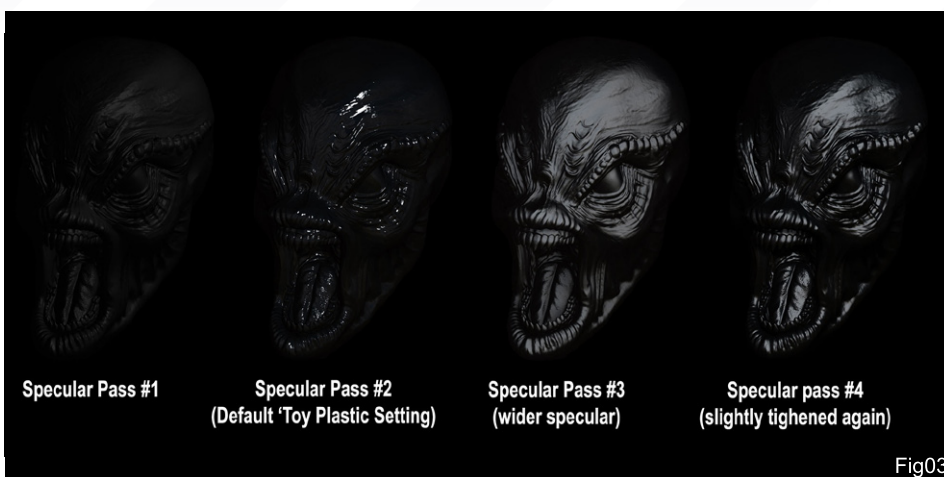


Fig03

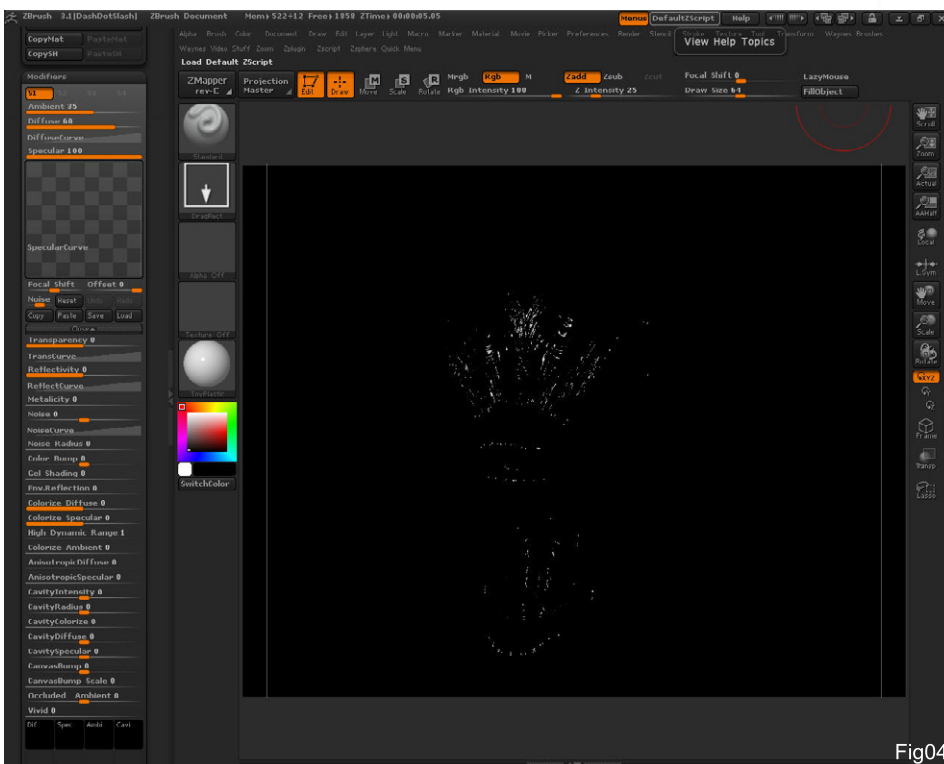


Fig04

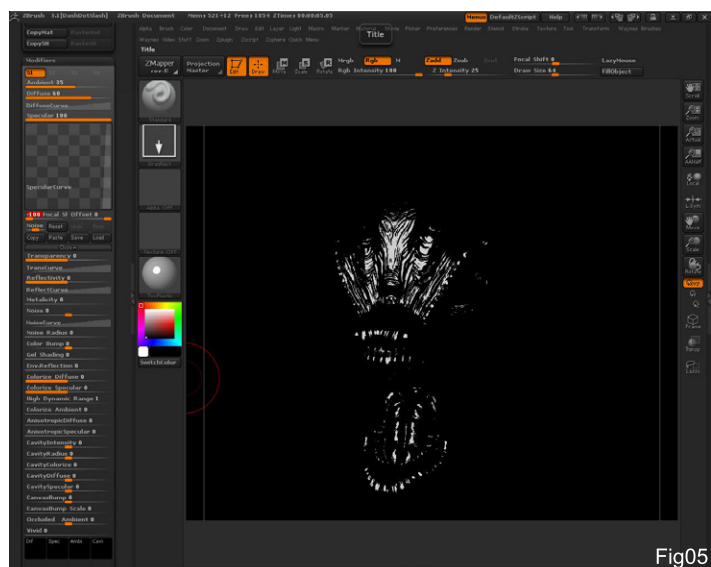


Fig05

colour information, with no shading at all. This is exactly what we need, of course. So export your image through the document menu (using Export) and keep it for later.

Note: Make sure that you keep all of your passes in one folder and that they are each clearly marked with a descriptive name. This stops things getting confused later on in the process.

Beauty Pass:

This one is something you will need to tune as the project requires it. For this model, I'll be using a matcap generated from a simple render of a sphere, with the mental ray Fast SSS skin shader and some decent lighting. I made sure that the shader didn't have too much of a skin colour to it so that it wouldn't over colour my texture.

Obviously, my model was already painted before the matte pass was generated, so it was a simple matter of turning the colour information on for this digital sculpt. Do not move your model at any stage of the ZBrush process or the whole workflow will come crashing down around your ears. As when I made this matcap I knew what lighting I was aiming for, I made sure my lighting matched within ZBrush. Why? Well, although a MATCAP has lighting and reflective information baked into it, as my lighting matched I was able to get more control of the shadows by using it along with actual lighting. This normally wouldn't be a good idea if using matcap, but in this case it works fine. Otherwise if my lighting didn't match my matcaps baked in lighting, I would end up with a mess, shading wise, in my beauty pass.

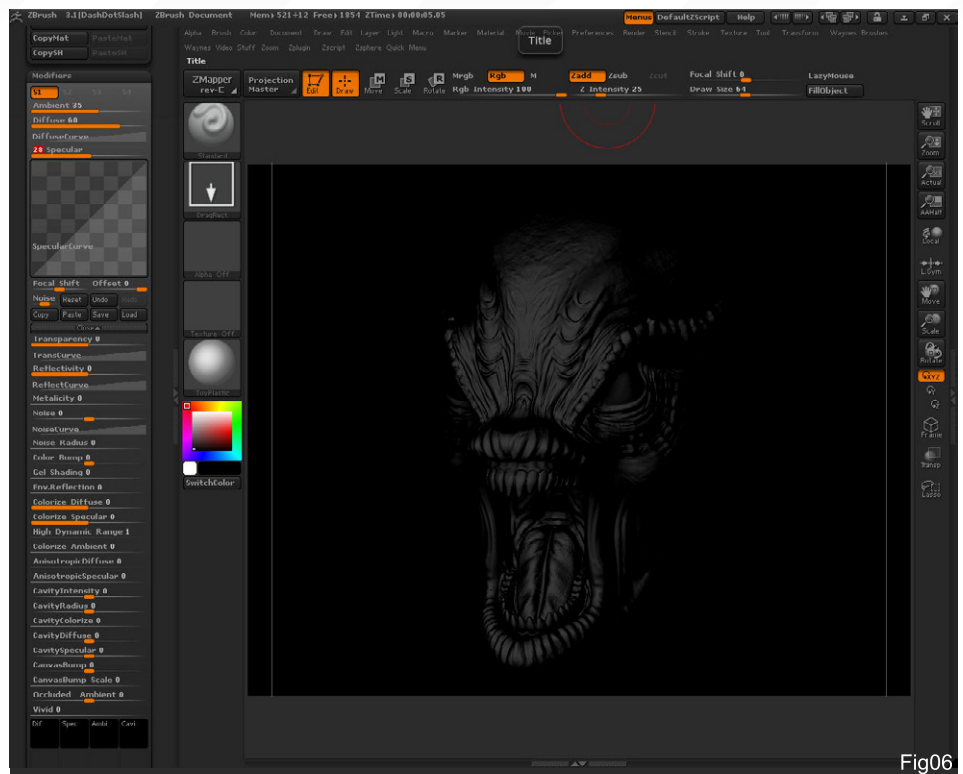


Fig06

I set my render options with my fog set to black, and I dragged the first depth slider onto the nearest point to me on the model. Then I set away and exported my beauty pass.

Specular Passes:

I create a number of specular passes for a reason: more often than not, getting your

specular looking right is the key to making a surface believable. Now, usually the two most important things in making any image of a sculpt look good, are the specular and shadows. As we have dealt with the shadow side of things when exporting our beauty pass, this makes things simpler (Fig03).

For my specular shade, I'm a big believer in the 'simplest is best' motto. So I turn all colours off for my model and its sub tools (in this case only the teeth and gums are sub tools). So I use the normal ZBrush 'Toy Plastic' Shader, with the main colour chip turned to complete black. I start rendering out a 'wide' setting one that I have already tweaked, and then use the default Toy Plastic setting and widen, more and more, for each specular pass.

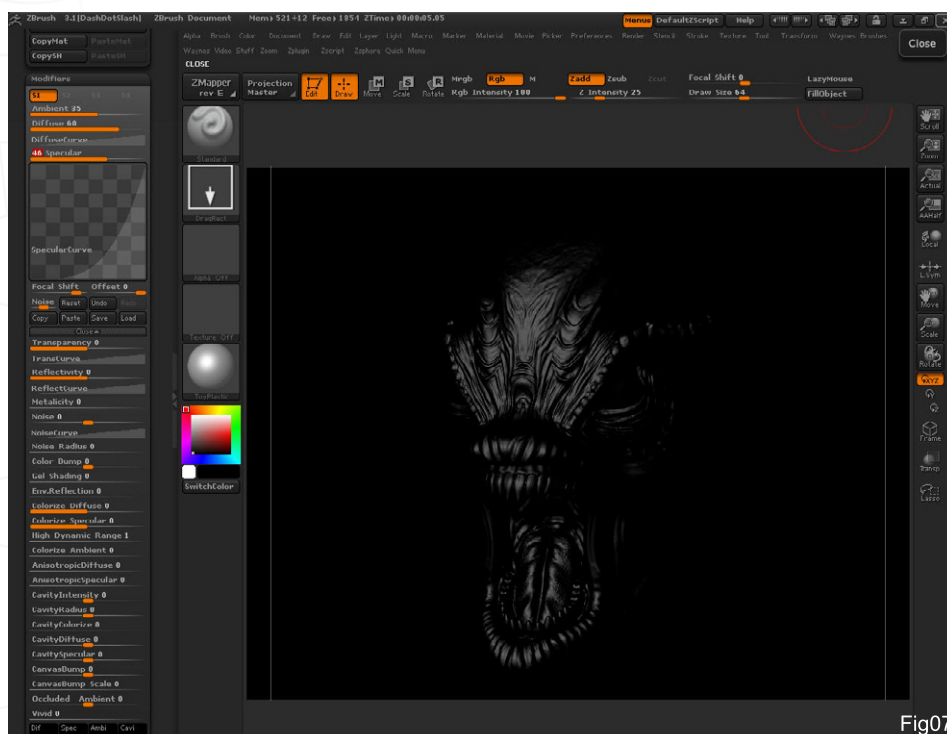


Fig07

I also do something unexpected, here: I do not render the image with its lighting as the preview for this is sufficient for what we want, and because the render has a habit of washing the white areas out a little, which is not something we want. You can see the slight changes that I made to each of the 4 versions of this shader, which I made for my specular passes (Fig04 - 07).

As a rule, I start with the default setting on the Toy Plastic shader for my tightest specular pass, and then change the specular level and

if, during the composite, I dislike where it's heading and want a different spec. effect!

So now you have all of your specular passes needed for part 2 of this article, where we will take it into Photoshop and composite and change these passes to make this image exactly as we want it. I'll outline why every step I make is made, and also why, as well as 'how', it all fits together so that you can adapt it to your own work flows and models.

POST PRODUCTION: PART ONE

For more from this artist visit:

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"THE PROJECT ITSELF
OCCURRED TO ME AS A
NATURAL RESULT OF MY
PASSION FOR FANTASY
GENRE AND MY DEEP
INTEREST IN MEDIEVAL
HISTORY..."

Ognian Bonev uses
3ds Max, ZBrush &
Adobe Photoshop to
create this stunning
visual representation
of a medieval room...

Alchemist room

Alchemist room

CREATED IN:

Autodesk 3ds Max, ZBrush & Adobe Photoshop

INTRODUCTION

A bunch of soft, bright beams of late afternoon winter sun is playfully sneaking through the grated window of the old alchemic lab, graciously eliciting its velvet warmth on all those thick books and manuscripts, full of ancient knowledge and forbidden secrets. It lightens up the strange equipment, various flasks and objects scattered all over the room (Fig01).

This vision attracted my attention and involved my imagination in the making of my Alchemic Room. The project itself occurred to me as a natural result of my passion for fantasy genre and my deep interest in medieval history.

In the next few paragraphs, I'll describe the main stages of my creative work process.

REFERENCES

As in all projects of this kind, before getting to the modelling and building of the scene, the first step I usually take is to gather all the necessary background and reference images, which will give me a better idea for the design and the specific atmosphere of the future work.

In this particular case my interest was focused on collecting a variety of reproductions of medieval pictures and engravings, representing different varieties of alchemic laboratories.

Thanks to that I got a better idea of the objects and equipment typical for medieval alchemic labs (flasks, scales, furnace blowers, etc.), as well as about the architectural peculiarities of those days (supportive columns, forms of the windows and so on) (Fig02).



In this case, collecting suitable references was of special importance, as in the making of this project I skipped the usual initial stage of creating a preliminary 2D concept of the scene.

MODELLING

From a technical point of view, the idea of the project itself was to create a visual representation of a medieval room, full of different, scattered objects lying around, giving the idea of the occupation of its owner and the

messy ambience that he resides in. With this line of thought, it was reasonable to create the scene starting with the specific terrain on which all the rest of the elements would be presented. In this case, the terrain was framed by both the form and size of the room (Fig03 and Fig04).

MODELLING THE ROOM

The room model alone consists of several main sub objects - modelled separately, then unwrapped and finally combined together (Fig05)

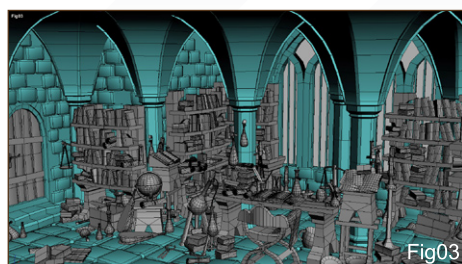


Fig03

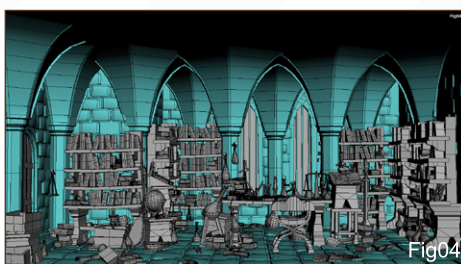


Fig04

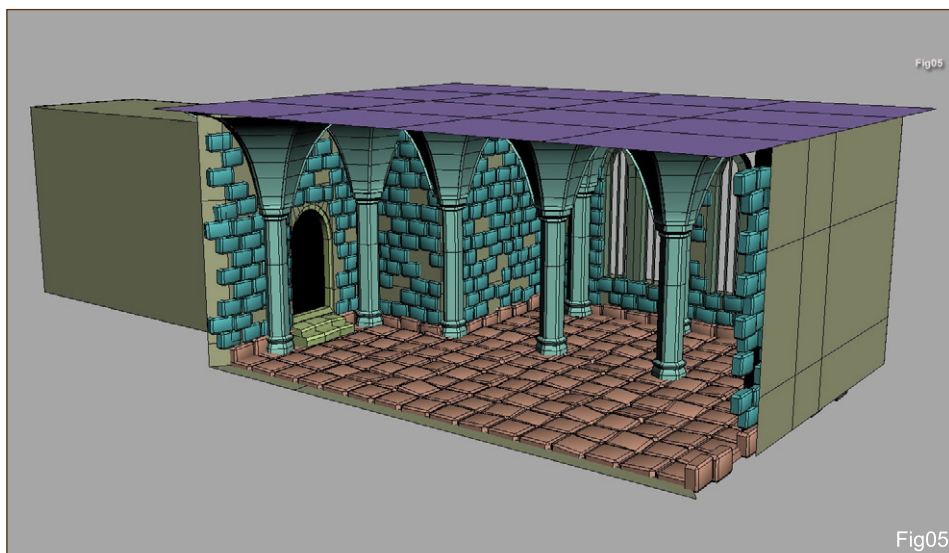


Fig05

and Fig07). These main parts are: the walls, the floor, a patch of wall tiles, a patch of floor tiles, stone frames for the windows, a doorstep, a doorframe, and finally the main columns (Fig06).

All of the sub-elements from the room model were made using two standard primitives, box and cylinder, converted subsequently into editable poly objects and then edited using the standard tools for poly modelling in 3ds Max, such as cut, extrude, bevel, and by adjusting the vertex and edge positions, etc.

A typical example for this approach are the patches of floor and wall tiles which were made by slightly modified box primitives (Fig08).

ADDITIONAL OBJECTS IN THE SCENE

After I laid down the base of the scene, by building the room shape, the next step was to create the rest of the objects which filled in the detail and content, and contributed to achieving more density and a rich, authentic atmosphere (Fig11).

In this case, the models were various and typical for the period; objects from everyday life, such as books, scrolls, candlesticks and so on (Fig09 and Fig10).

For the actual modelling, I used entirely standard primitives again: box, cylinder and sphere, converted into editable poly and then transformed using the poly editing tools. Keeping in mind that in the final scene there would be a considerable amount of variety of

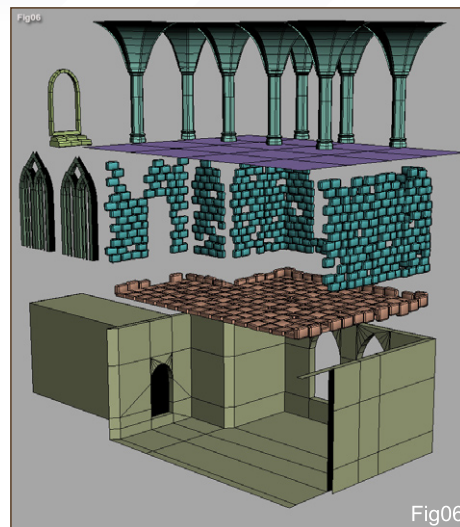


Fig06

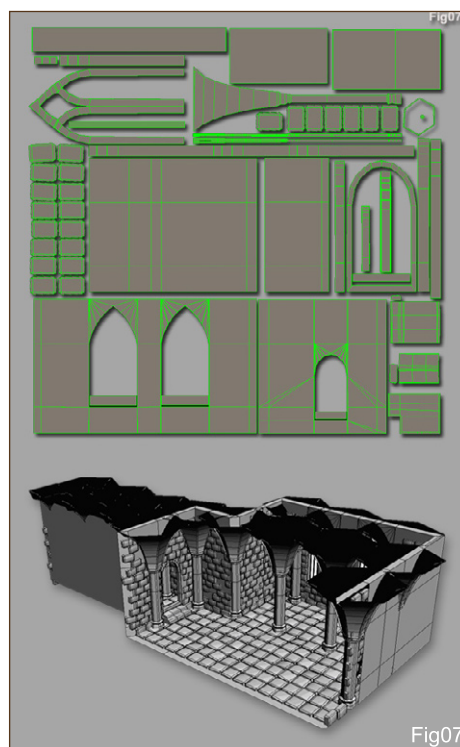


Fig07

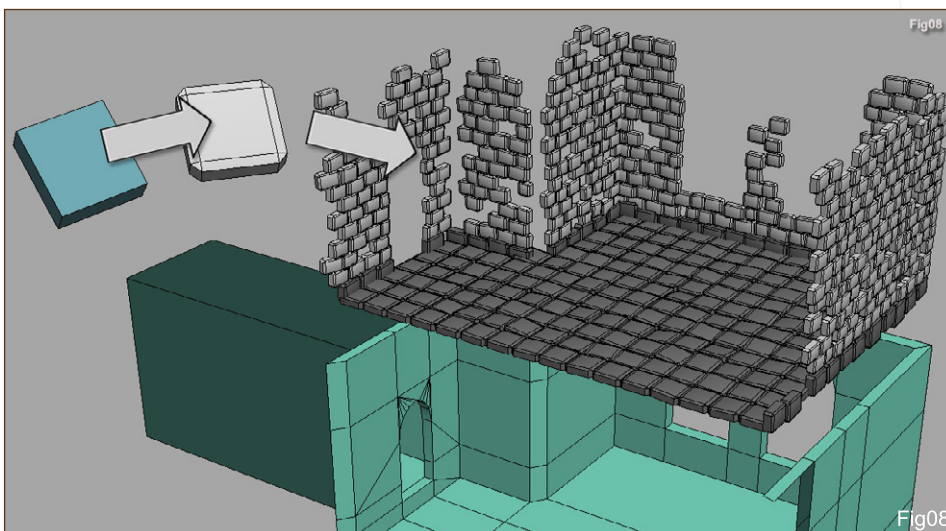


Fig08

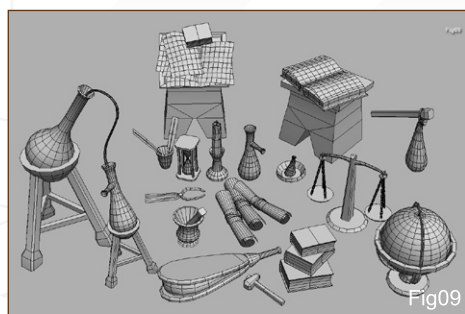


Fig09

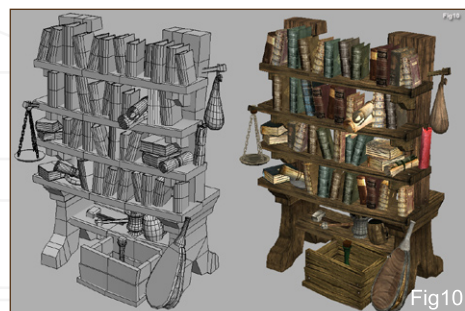


Fig10

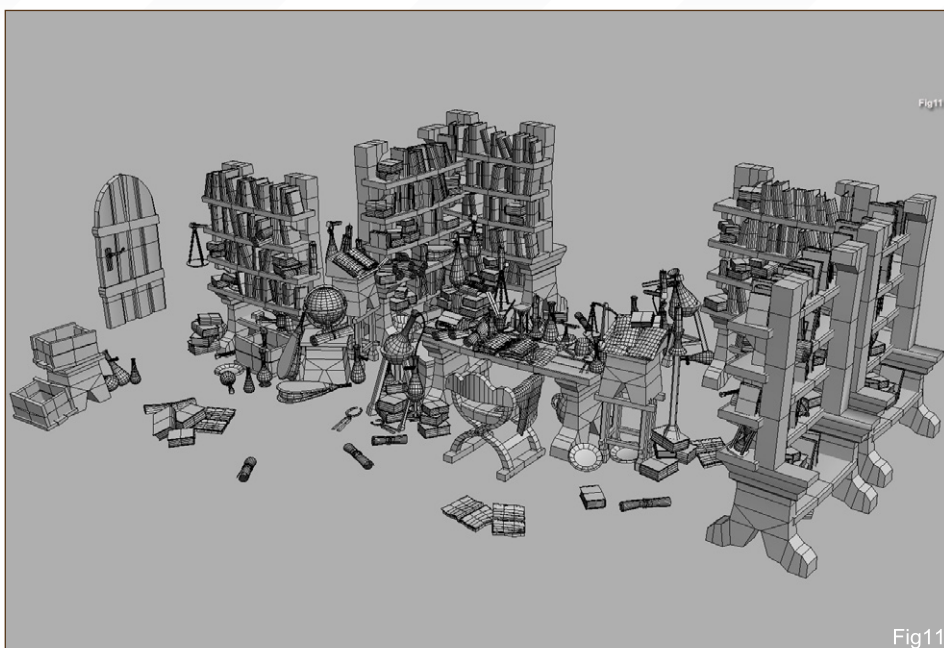


Fig11

objects, whilst modelling the elements I tried to avoid any unnecessary waste of geometry. That is the reason why a big part of the additional details, such as cracks and the roughness on the floor tiles, pleats on the cloths and so on, were made by exporting the low-poly model into ZBrush where I sculpted the desired level of detail, and then exported the generated normal map through the ZMapper plug-in (Fig12 and Fig13).

TEXTURING

For me, the texturing and unwrapping parts were undoubtedly some of the most important (and time consuming) moments of the 3D image creation process. There are various methods and programs to accomplish these steps; however my preferred combination is using the unwrap WVU modifier in 3ds Max (which gives me precise control over the texture layout) and Photoshop (Fig16).

For the actual texture painting in Photoshop, I used some previously adjusted versions of the displacement maps as base layers. They served as a good reference point for the following painted details.

After that I used several overlay layers to apply some simple base colours for the different

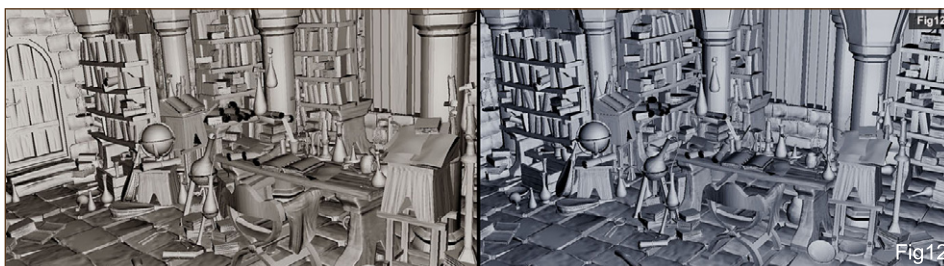


Fig12



Fig13

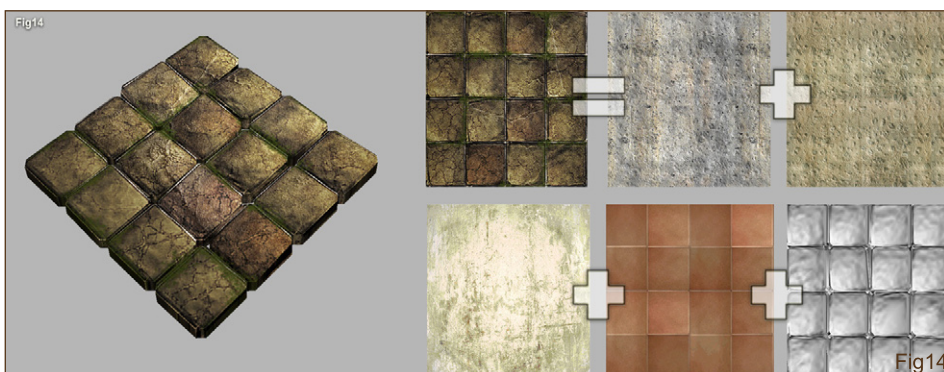


Fig14

objects in the texture, and then continued painting the additional details, combining them with some photographic textures to gain additional levels of detail (Fig14 and Fig15).

For the shading I used the standard Blinn and Phong shaders with just a few tweaks of their Specular Level, Glossiness and Soften parameters, when needed, along with classic map channels such as diffuse, colour, specular, transparency, bump/normal bump and so on.

LIGHTING & RENDERING

To gain the raw render of the scene I used a Target camera (Lens 27mm, FOV 39 deg.), along with a simple lighting setup: a Sky light, Target Spot light with ray traced shadows switched on, and an Omni light for some additional ambience lightening (Fig17 to 19).

For the final rendering I used Mental Ray (with Final Gather switched on) with a base setup and output size in HDTV format 3200 x 1800 pixels (Fig20).

POST-PRODUCTION & COMPOSITING

The resulting raw image of the scene was then ready to be used as a base for the final additional painting and compositing work (Fig21).

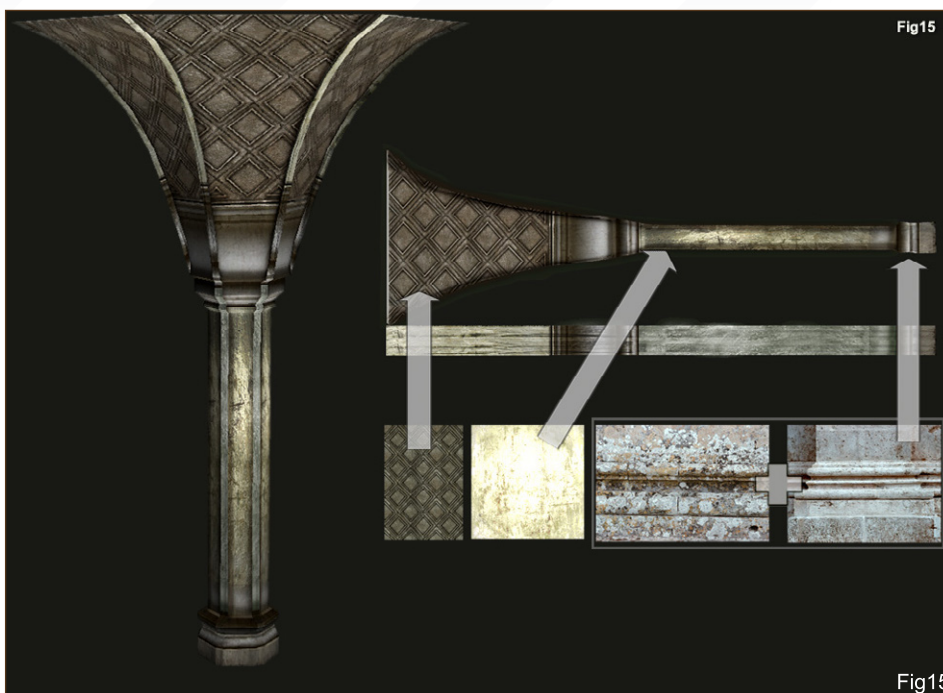


Fig15



Fig16



Fig17

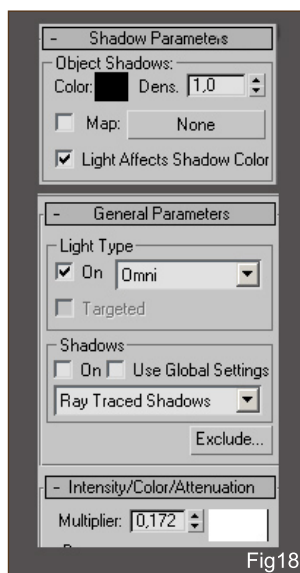


Fig18

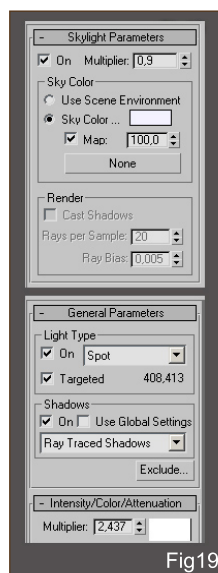


Fig19

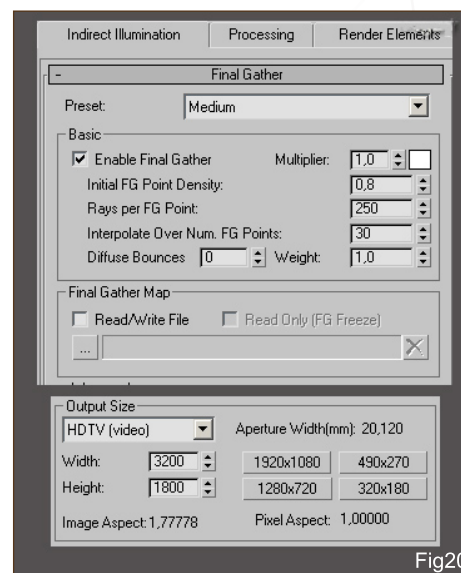


Fig20

Initially, I duplicated the layer with the rendered image and painted away all the visible seams and undesired artefacts left by the rendering process. Then I adjusted the colour balance, brightness, contrast and saturation parameters (Fig22).

The next step was to paint some additional details, such as some moss in the gaps between the floor and wall tiles, additional scratches on the columns, some wax leaks on the candles, and so on.

I then used different pieces of photographs on Overlay and Multiply modes (at different transparency levels) to add a more realistic and authentic look to the additional painted elements and to blend them in well with the rest of the scene.

I then spent some time adding some extra light and overshadows in the scene using some soft brushes in combination with Hard/Soft Light layers. I also added some little dust fractions, especially near the window where the light beams have the highest intensity (Fig23).



The final step was to further adjust the brightness, contrast and level properties of the image, and to add some noise and smart sharpen filters (Fig24).

The final result represents my personal vision of a fantasy-like, messy, but still cosy, alchemist vault. I had a lot of fun whilst making this project and I hope it brings you pleasure viewing it.

MAKING OF THE ALCHEMIST ROOM

For more from this artist please visit:

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Fig24





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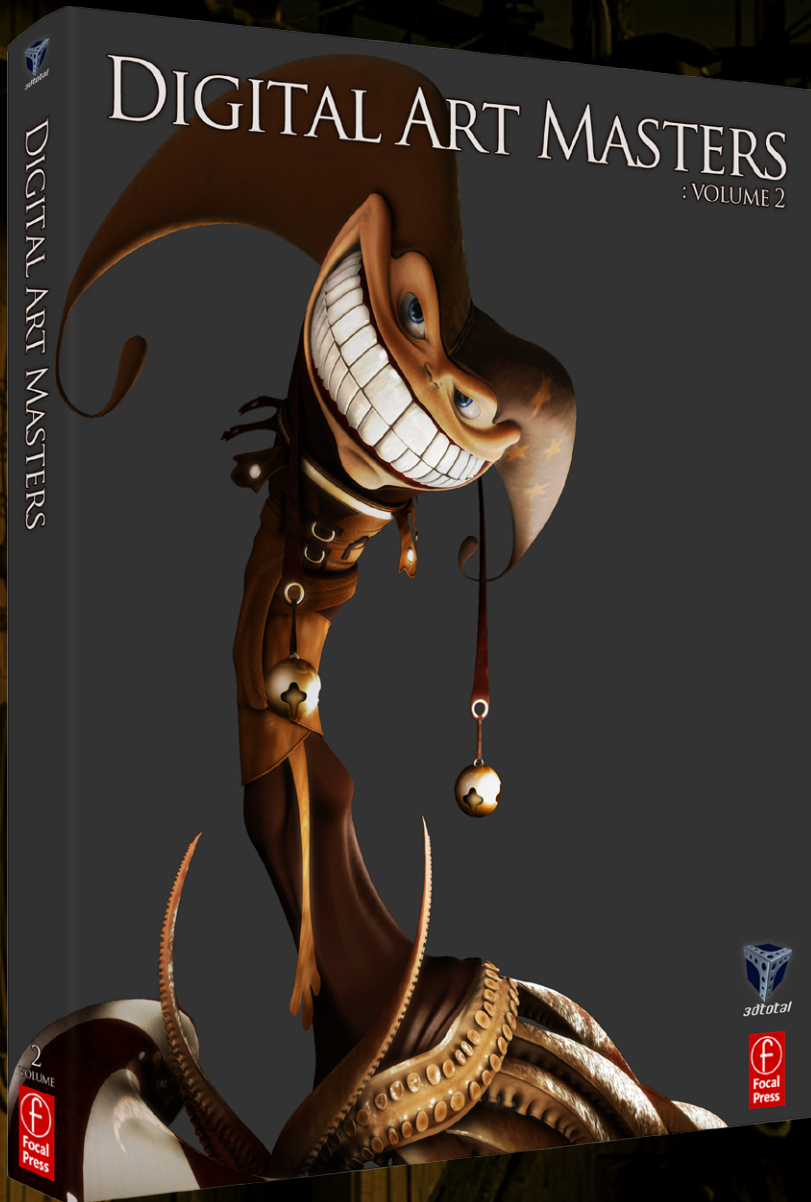
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The book is more than just an artwork book, as not only does it feature full-colour, full-page images, but each artist has described in detail the creation process behind each published artwork, in their own words, especially for this book.

This month we feature:

'Heritage'
by Marek Denko





HERITAGE

BY MAREK DENKO



INTRODUCTION

In the beginning there was an idea, which came to me whilst I was watching the movie, *Stalker*. It is a movie from 1979, directed by Andrei Tarkovsky, and I really enjoyed it. The movie is one of those films that is quite hard to understand. The environments in this movie are just awesome. At the end of the film there is a nice scene where the whole family is walking on the shore of a lake with a nuclear power plant in the background. The scene is a bit foggy and has dirty, old snow on the shores, and it is so gray and depressing, just as eastern Europe and Russia once was. This was my initial inspiration and the reason behind the creation of my work, *Heritage*. Although, in the end, my image was quite different to the

picture painted by the film, *Stalker*, but it did remain as my starting point throughout. Another important element in the picture is the presence of the transmission towers, which are so romantic during the sunset, and I really like these kinds of structures. So my first inspiration was the nuclear power plant from *Stalker*, followed by the transmission towers.

I spent more or less two months of my free time on this piece, with gaps when I was traveling. I enjoyed all parts of the image, step by step, during the hot summer nights whilst I was working in Italy. So, over the following pages, I'd like to write about how I created *Heritage* in a step by step format, from searching for references through modeling, texturing, shading, lighting, rendering and, finally, post-production.



PHOTOGRAPHED REFERENCES OF THE ARTIST



SCENES



SCENES

REFERENCES

For me personally references are one of the most important parts when I'm creating my images. Usually I spend several hours searching the Internet and my photo library trying to find the best references. Very often I just go outside to take new pictures if I need be. You should never underestimate this part of work. In your references you can find a lot of interesting things and details which are very hard to represent if you don't see them directly. They are very helpful for modeling, texturing and shading (Fig. 01a-f).



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MODELING

For me, modeling is really quite relaxing. I added so many more details in my models than I have done before, and really enjoyed the task. I agree that it was definitely not necessary to model all of these details, but in my personal works, where I'm not pressured by deadlines, I'm free to spend more time on these areas. All geometry was modeled in 3D Studio Max as editable polygons. In most cases I started from primitives, such as a plane, box, cylinder, sphere or line, and after few deformations I usually converted them to Editable poly. Then I applied extrusions, bevels, chamfers, cutting and all those modeling tools which are available in your 3D package (in this case 3D Studio Max). I usually use several types of modifiers to deform or change the geometry. For example Symmetry, Bend, Twist,



Fig. 02a



Fig. 02b



Fig. 02c



Fig. 02d

Taper, Free Form Deformation, Noise, Displace, Turbosmooth, Wave, Ripple, Path Follow, and so on. If you are a beginner in 3D you should read the accompanying manual and try to understand how everything works but, trust me, the modeling of static objects is one of the easier parts of 3D. I essentially used an Editable poly with functions such as connect, slice, weld, cut, extrude, bevel, chamfer, and so on. Again, I'm sure that all of these functions are described in your user reference. If you want to be a swift and precise modeler you need to know your tools as best as you can, so take the time to study them and try them out. Don't avoid solving things for yourself as opposed to posting questions in forums, as there is no substitute for learning through experience. I'd like to mention that, for the grass modeling, I used a script called *Advanced Painter*, by Herman Sakono, later upgraded by my friend Federico Ghiardini. This script allows you to do something similar to Maya's PaintFX, but in 3D Studio Max. Another useful plug-in I used was *Grease*, which allows you to create 'Grease' like surfaces with a few clicks. I used it to create certain parts of the power plant (Fig. 02a-d).

UV MAPPING, TEXTURING & SHADING
If there is something I find boring in CG it is definitely making UV maps. For these I used basic planar, box and cylindrical mapping almost everywhere. I always unwrap only those parts which really require it. In this case it was only the concrete part of the transmission tower in the foreground. This is mainly because this part is displaced with a V-Ray displacement modifier, and to have a continuous displacement you need to have continuous UVs. There is a lot of displacement which is just great in V-Ray, but I was very careful about where to use it. It's hungry for memory and slows down the render times, but the end result is much better. For texturing I used textures from my personal library, pictures I had taken, and also from www.environment-textures.com. This is the biggest reference library of environment textures that I know. I also used a lot of dirt textures from the 3DTotal Textures collection. These are some of the most used textures in my personal, as well as professional, work. I used a V-Ray material as a base shader

for all geometry. Very often I use low intensity, fresnel, glossy reflections. In general, raytraced reflections also increase render times but they help to create a more natural and believable looking image. For smoke on the power plant I used pre-rendered images. I made them with ParticleFlow and Afterburn and then I projected them onto planes (Fig. 03).

LIGHTING AND RENDERING

For the lighting I used a V-Ray dome light as a skylight and one directional light for sunlight and didn't use Global Illumination this time. I wanted a high contrast in the image and therefore the bounced light was not that necessary. The image was rendered to a 2000 pixel width resolution with the Mitchell-Netravis anti-aliasing filter to make it a bit sharper. It was quite a nightmare to render it too, and took something like sixty hours on my laptop (Centrino duo processor with 2 GB of Ram). Of course there are many options to optimize the render time; more than half of the image could be a matte painting. Despite this I still think that I spent the time wisely while working on it and finishing it in 3D. Computer graphics is my job but it is also my great passion and I really like to play with the details in my work. Actually I'd like to point out that I've already optimized this scene for animation reducing render times to about 10-15 minutes in HD resolution on the same hardware. So in the near future it is quite possible that you will see it somewhere online.



ARTIST PORTFOLIO

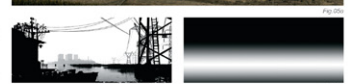


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Fig. 186

3DC

Here is what's in next months
issue of 3dcreative

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André Cantarel
Herbert Lowis
Kolby Jukes

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Self-taught or College
Educated? Which is best?

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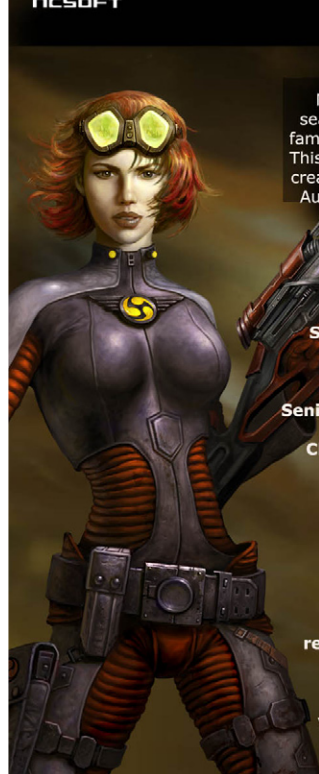
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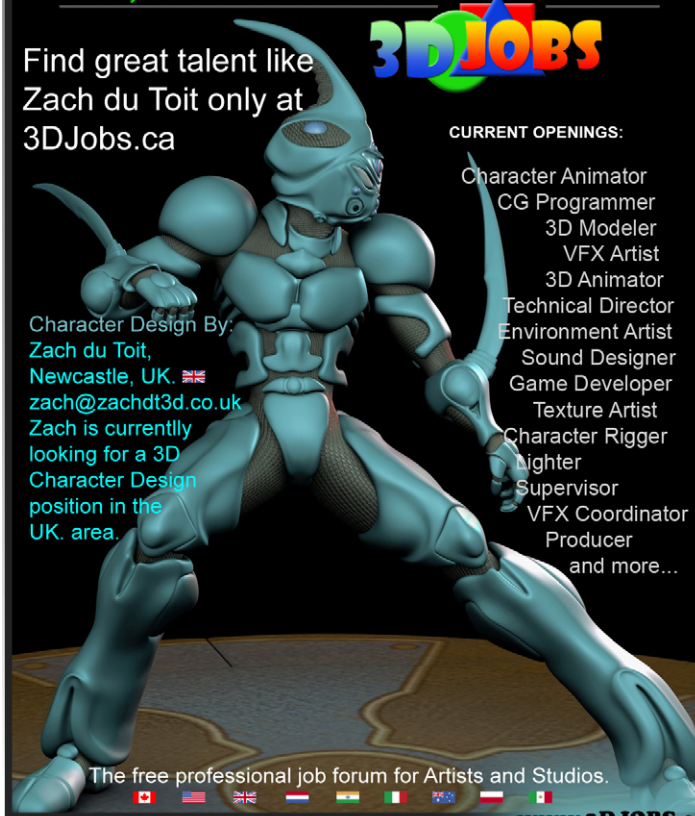


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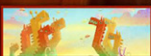
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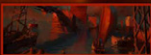
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3D environment lighting



3ds max

'3D Environment Lighting' is our new 6-month tutorial series. Over the course of the next six months, this series will be detailing techniques on lighting an environment under a number of different conditions. Each month we will cover a step-by-step guide to setting up lights, aimed at portraying the scene in a specific manner. The various tutorials will be tailored to specific software packages and each will aim to show a comprehensive and effective way of lighting an interior of a ship that includes both natural and artificial light. These will include a sunny afternoon, sunset, moonlight, electric light, candle light, and finally a submerged submarine light. The schedule is as follows:

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3D ENVIRONMENT LIGHTING PART 6 – UNDERWATER

In this last 3D Environment tutorial we'll set up a nice underwater scene for the ship cabin. Just imagine it sunk and laying on the ocean bed. You can find a lot of references all around the web (for example, the "Titanic" movie) to see how light behaves underwater, and most of all the colours that you will need to use to give your scene more realism.

1. First of all, let's open the 3DENV_Part6_Underwater.max scene file (Fig01).

2. We need to set up a basic lighting, and then we can concentrate on obtaining a nice underwater scene. Open the Rendering panel (F10) and in the Common tab scroll down to the Assign Renderer rollout and assign mental ray Renderer as shown in Fig02.

3. Create a polygonal sphere, select its lower half and delete it. Select all the remaining polygons and flip them to make them point inward.

Fig 01

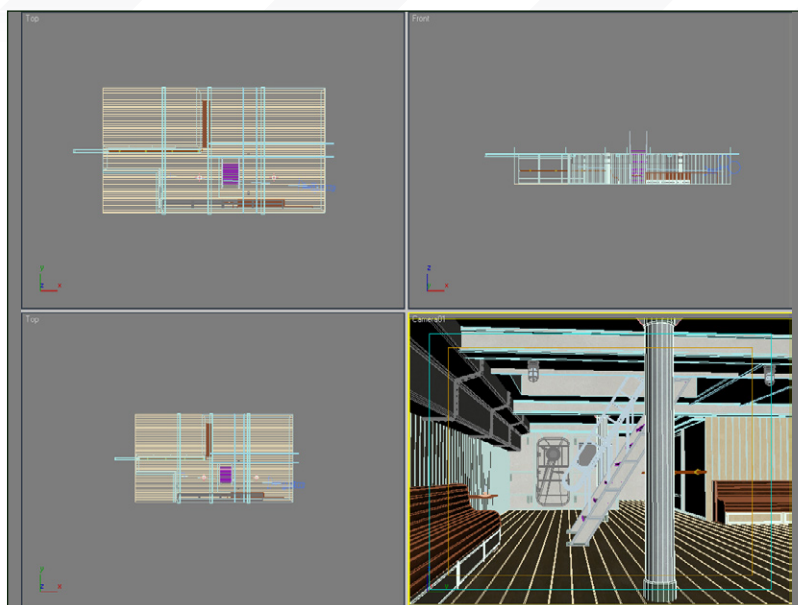


Fig 02

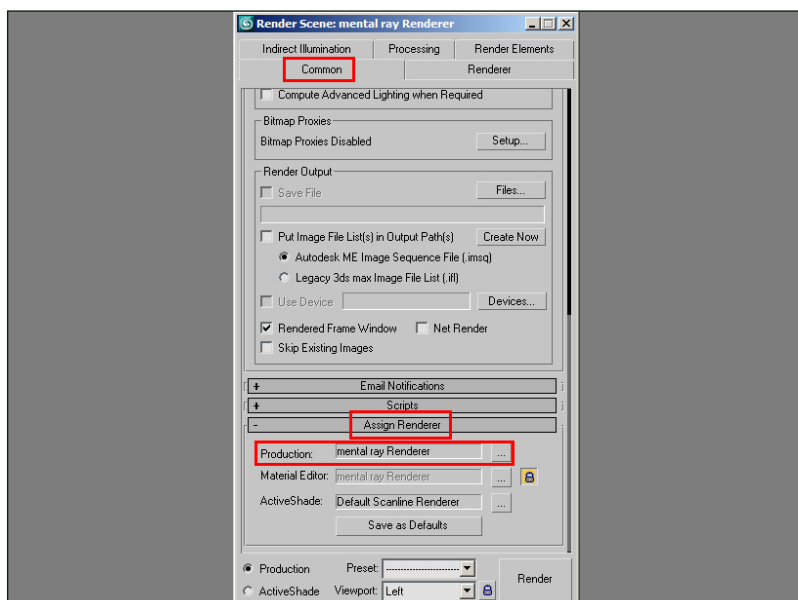
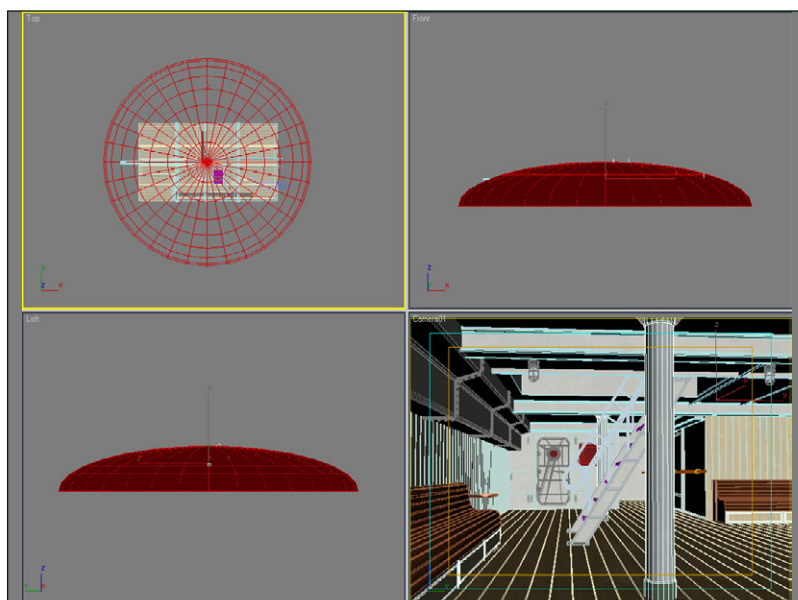


Fig 03



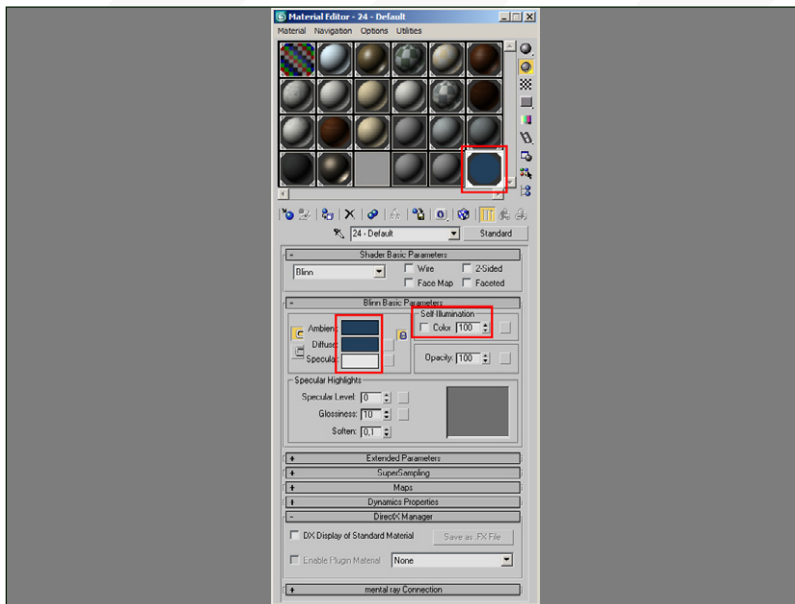


Fig 04

4. Open the Material Editor (M) and create a new Standard material of a blueish color. Also, set its Self-Illumination parameter to 100%. (Fig04)

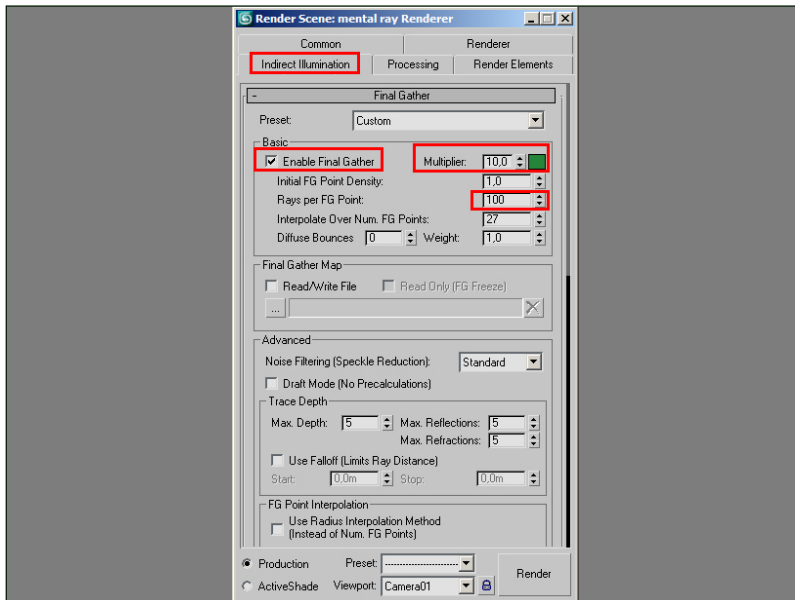


Fig 05

5. Open the Rendering panel again and switch to the Indirect Illumination tab. Enable Final Gather and set its Multiplier to 10. Also change its color to a nice green. Set the Rays per FG Point to 100 for now (we'll increase it later for the final rendering).

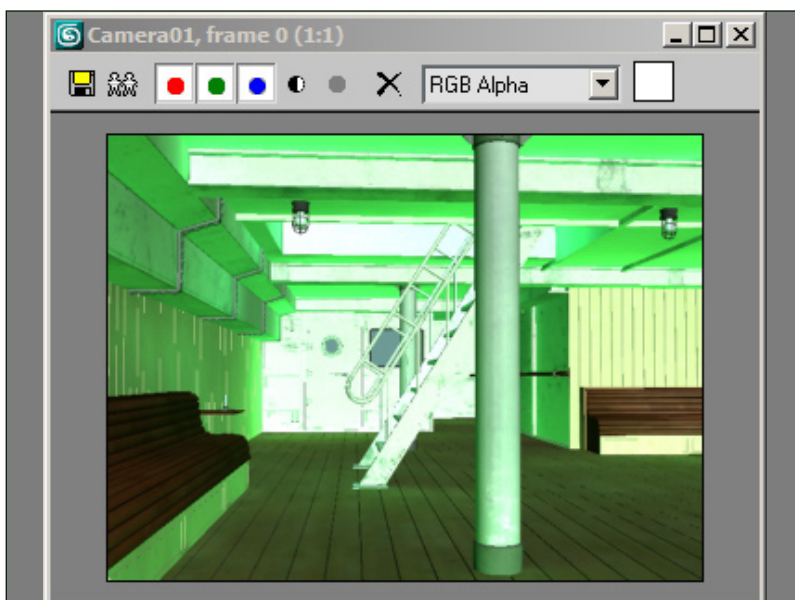
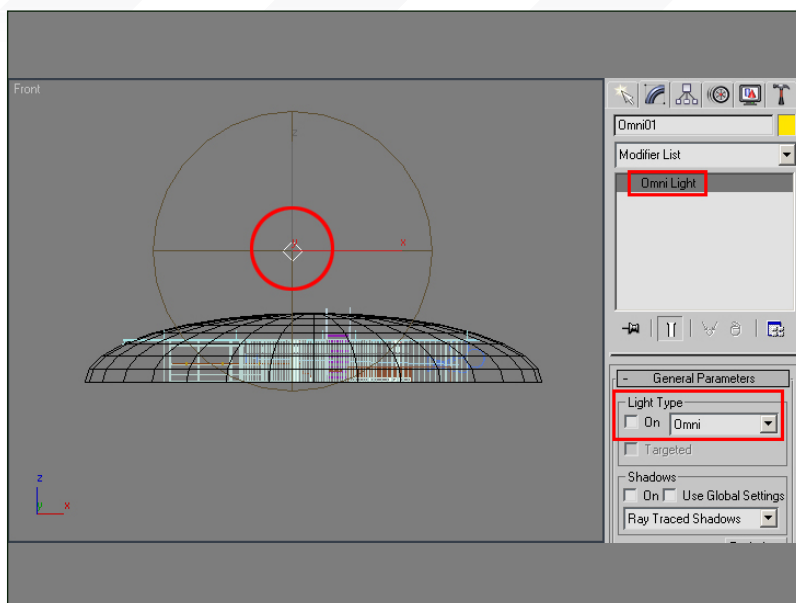


Fig 06

6. If we render the scene now (Fig06), you'll notice that it's way too bright and greenish. It's because we don't have any "real" light source in the scene, so all the lighting is up to the Final Gather solution we just created.

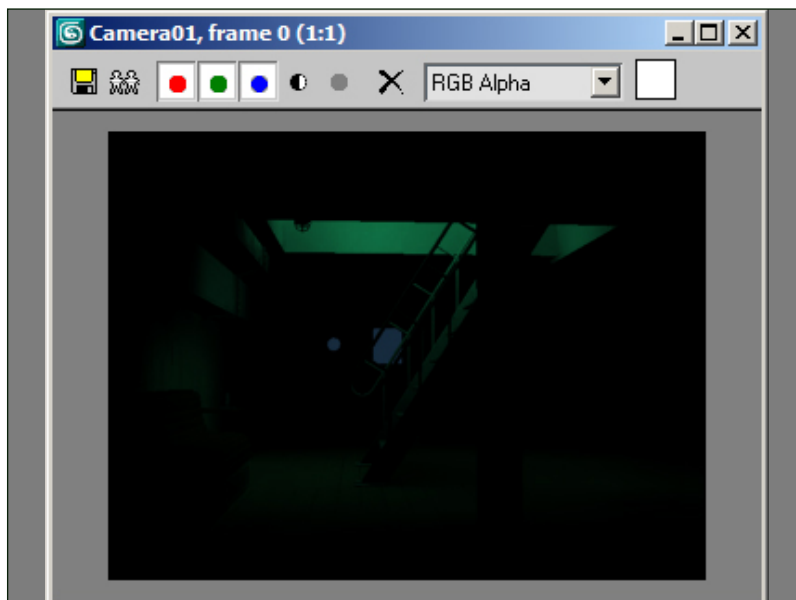
7. Create a mr Omni Light and position it anywhere in the scene. Make sure that it's disabled (uncheck the On option).

Fig 07



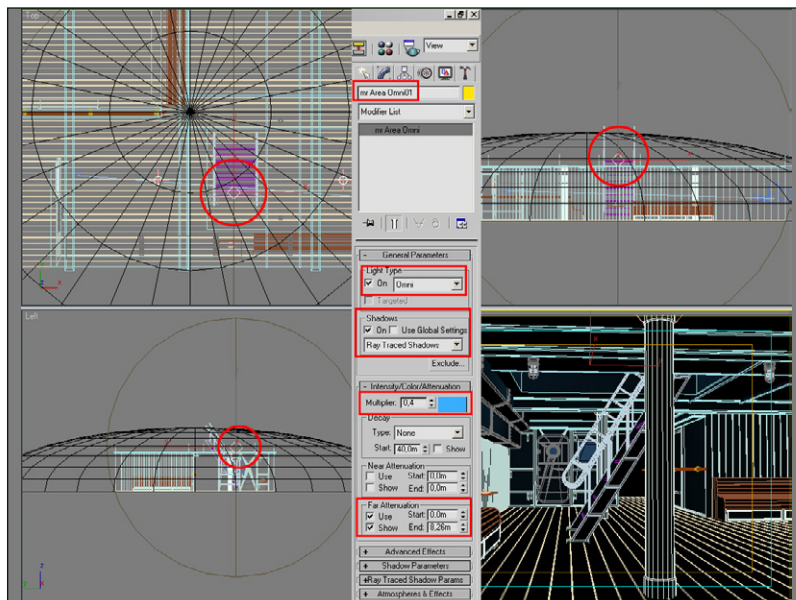
8. Render the scene again. As you can see, now it's much too dark. We can now start working on this solution to create our desired lighting situation.

Fig 08



9. Move the mr Omni Light in the right position (just above the opening in the ceiling, as shown in Fig09) and copy the parameters from the picture in the middle of Fig09.

Fig 09



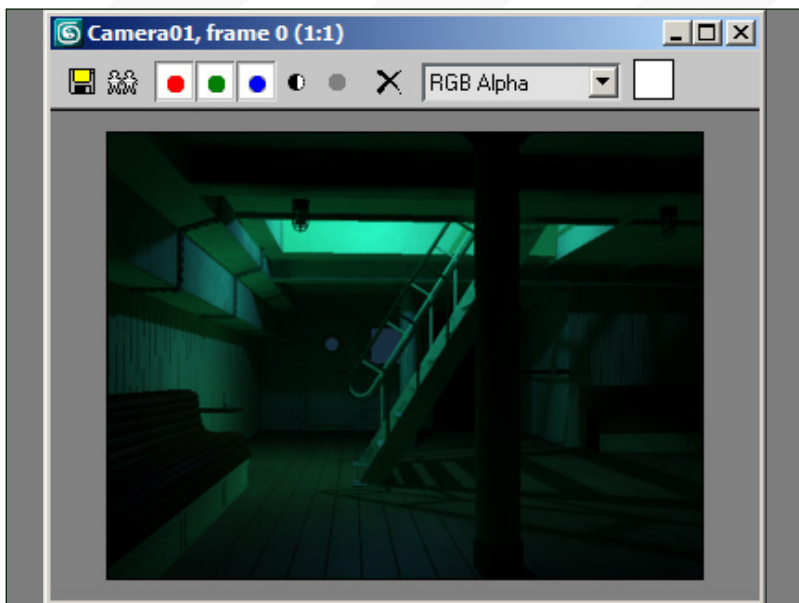


Fig 10

10. Render the scene. Now it looks much better, and the colors start to look fine. The shadows are just too sharp, we need to blur them a little with the Area Light feature.

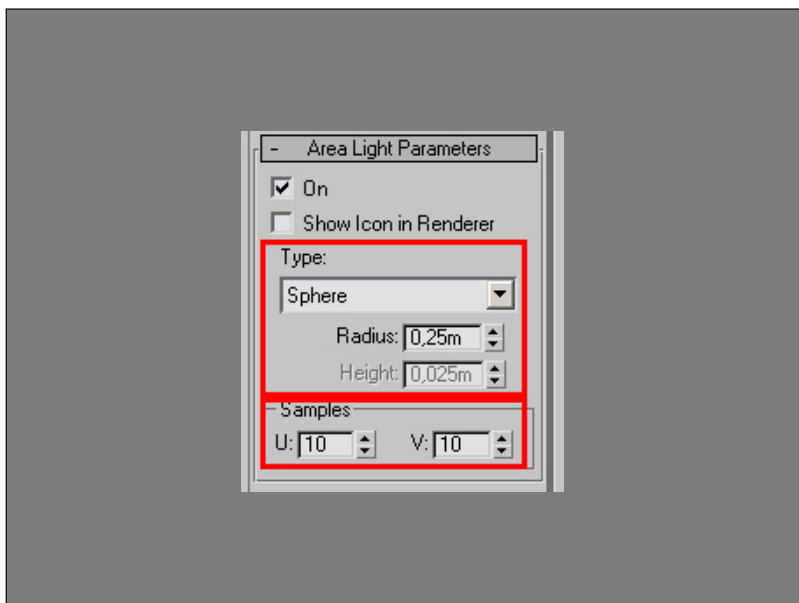


Fig 11

11. Reach for the Area Light Parameter rollout in the Light properties, make sure that it's set to On. Also check if the Type is set to Sphere. Increase the Radius value up to 0,25m and the Samples values (both U and V) to 10.

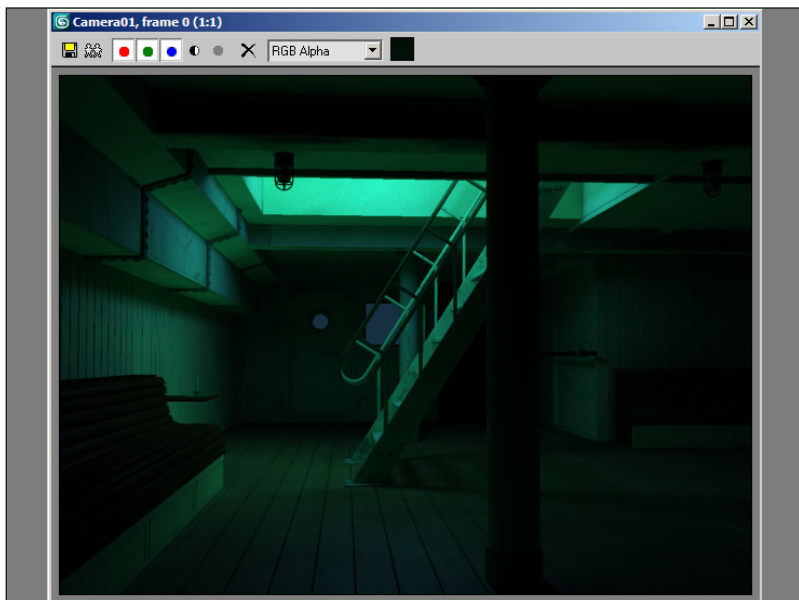
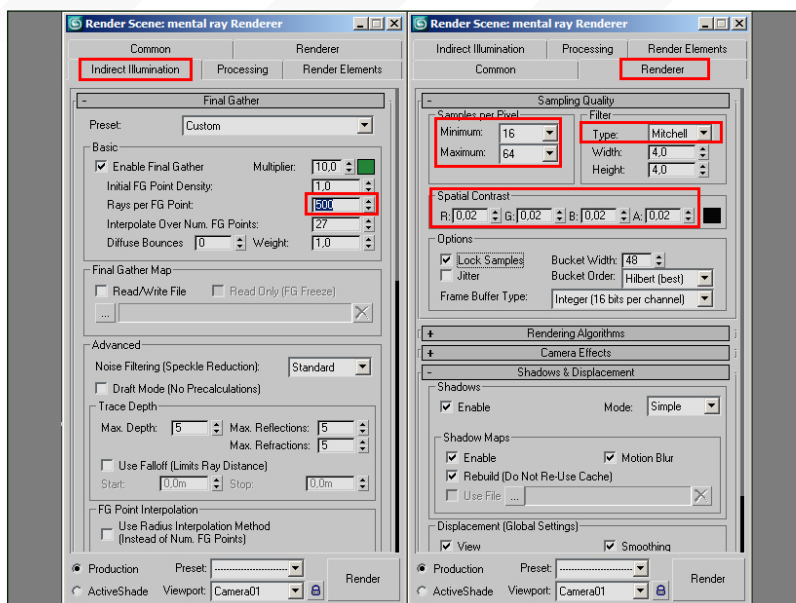


Fig 12

12. Render the scene again. This time we can increase the rendering resolution to 640x480 to have a better feedback on the overall quality of the picture.

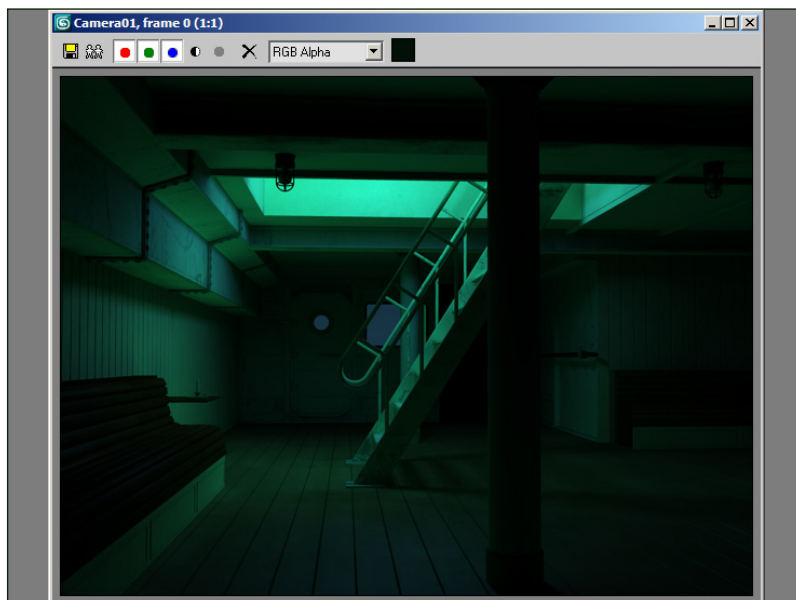
13. Now we're ready to set the parameters for the final rendering. Open the Rendering panel and pump up the Rays per FG Point value to 500. Switch to the Renderer tab and copy the parameters from the right picture in Fig13.

Fig 13



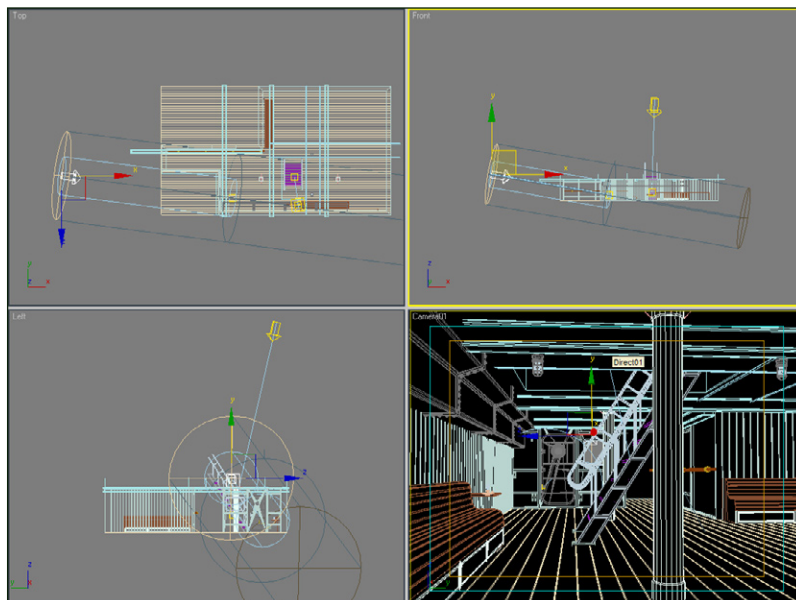
14. Here is our final rendering pass. We can save it for later use in Photoshop.

Fig 14



15. Now open the 3DEnv_Underwater_Volume.max scene file.

Fig 15



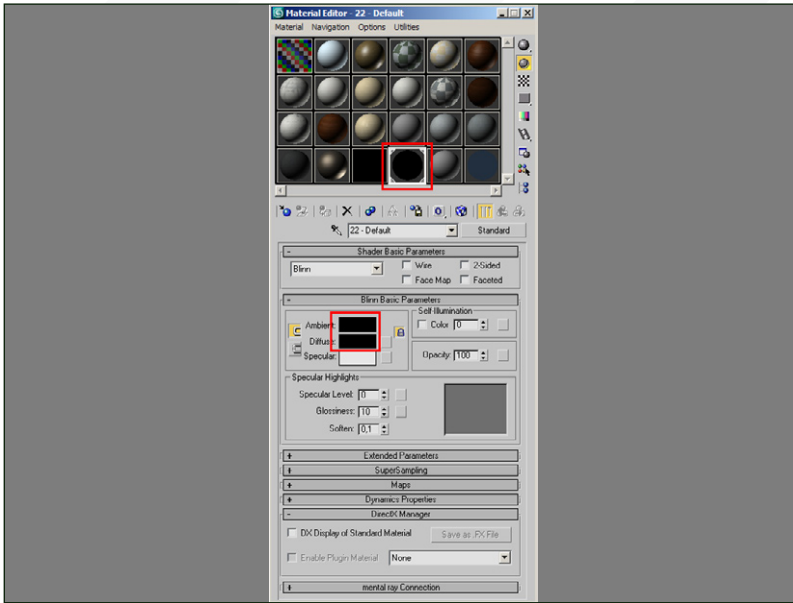


Fig 16

16. This scene was created to render the Volume Light effect. There are different ways to get this task done; we could use Mental Ray's own volume effect, but it would require longer rendering times. So I choose to use the standard volume light effect of 3dsmax. In this scene a pure black material was assigned to every object in the scene.

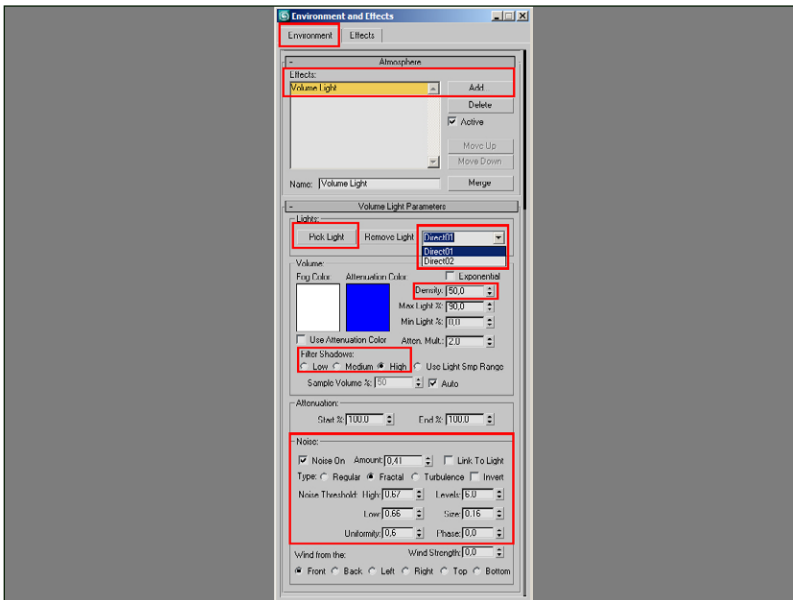


Fig 17

17. Open the Environment panel (8 shortcut key). As you can see, a new Volume Light effect was created and both the Directional lights present in the scene were assigned to it. (Fig17). Have a look at all the other parameters marked in red in Fig17 and copy them in your scene.

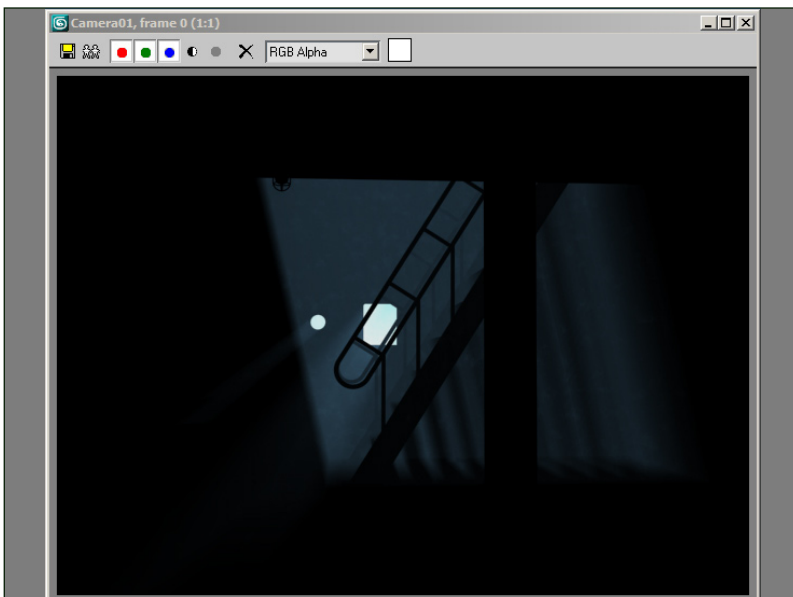
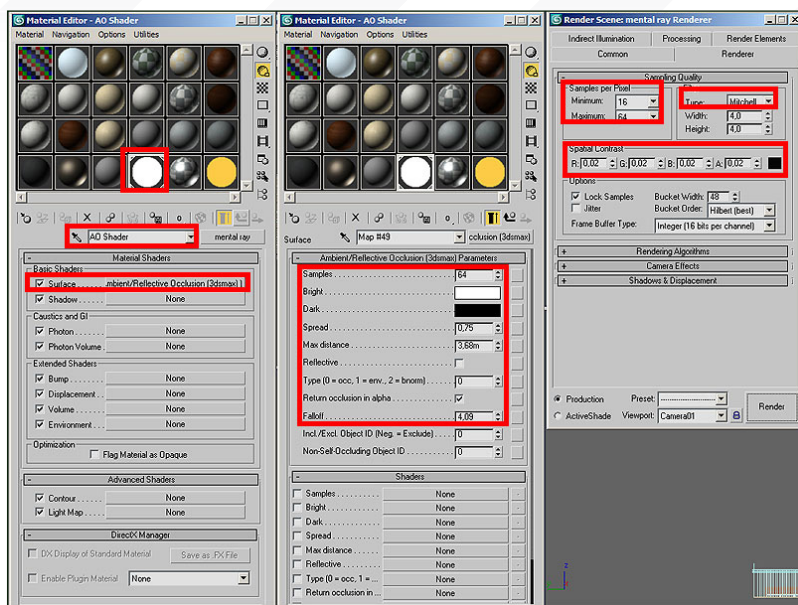


Fig 18

18. Render the scene. Everything is pure black and here is our Volume effect. Save this rendering as a picture for later use in Photoshop.

19. We also need an Ambient Occlusion (AO) pass to enhance the details in the rendering. Open the 3DEnv_Underwater_AO.max scene file and refer to Fig19 to see the AO shader that was created assigned to every object in the scene.

Fig 19



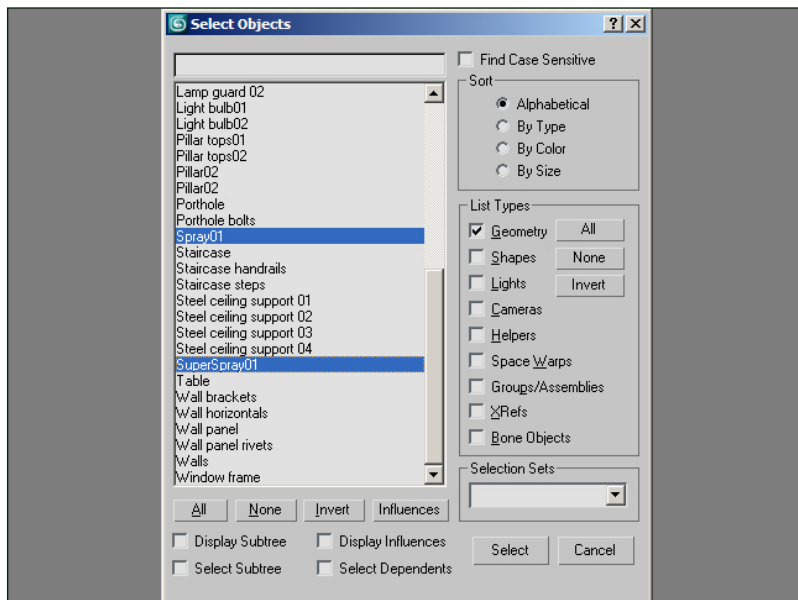
20. Here is the AO Pass rendering. Save this picture, too. We'll composite it later in Photoshop over the original rendering.

Fig 20



21. Lastly, we need one more pass to composite the final image. We need some particles and bubbles all over the scene, otherwise it won't look like an underwater scene. Open the 3DEnv_Underwater_Particles.max file. In this scene a pure black color material was assigned to everything (just like before with the Volume pass), and some particle systems were created and put here and there in the scene.

Fig 21



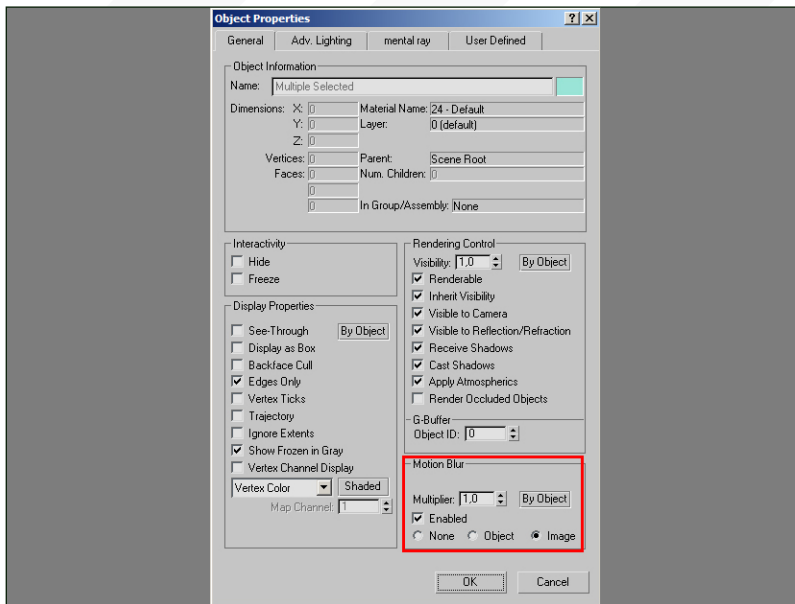


Fig 22

22. If you select the particle systems and open their Object Properties, you will notice that the Motion Blur effect is enabled; this was done to give the bubbles and particles some motion effect, since we're doing a static rendering and not an animation.

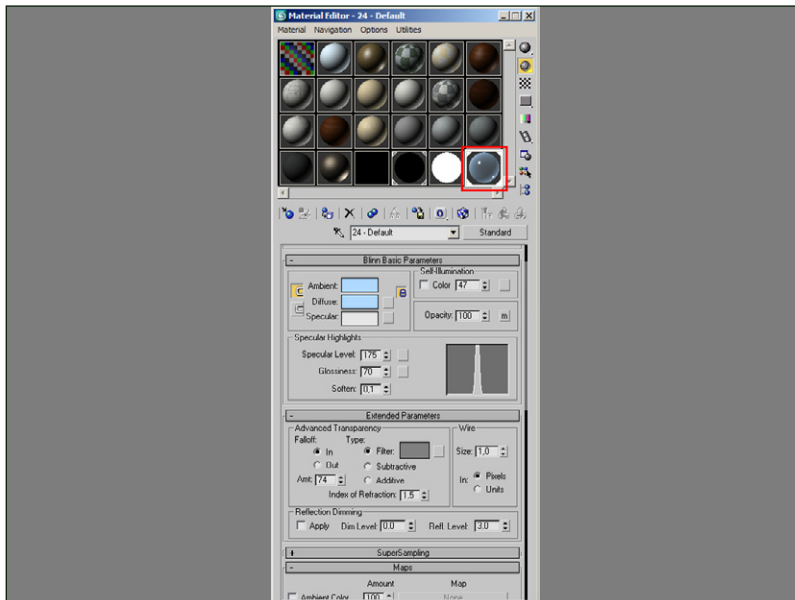


Fig 23

23. You can also check the material that was created and assigned to the particles.

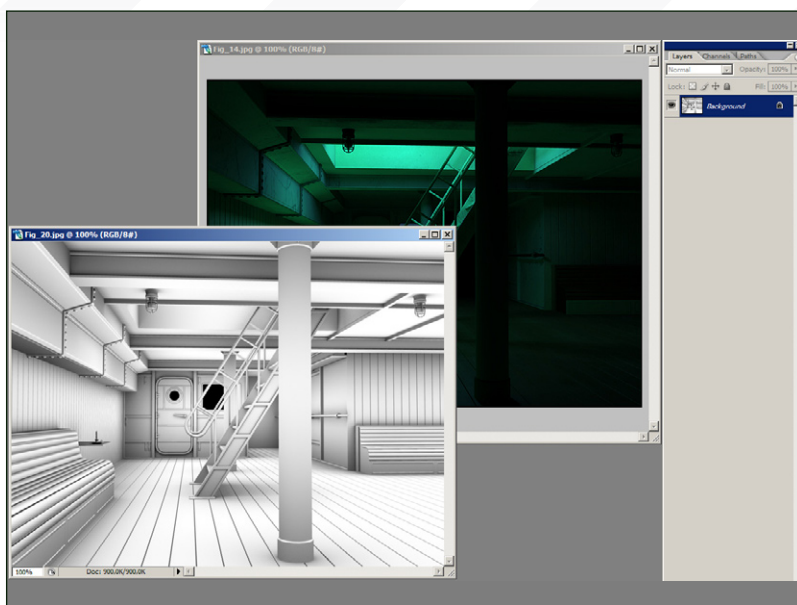


Fig 24

24. Render this last pass and save it as a picture. (Fig24) Now we're ready to composite all the passes together in Photoshop or similar 2D applications.

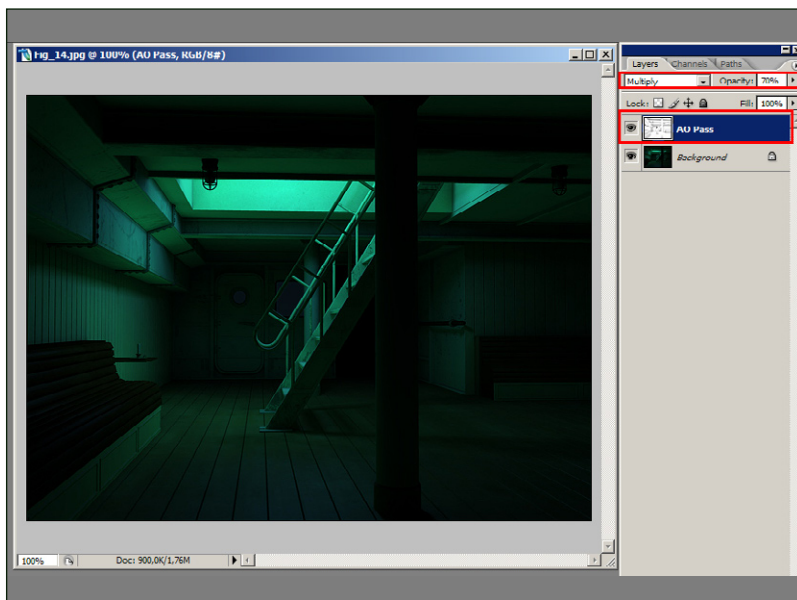
25. Let's start with the AO Pass. Open the original rendering and the AO Pass.

Fig 25



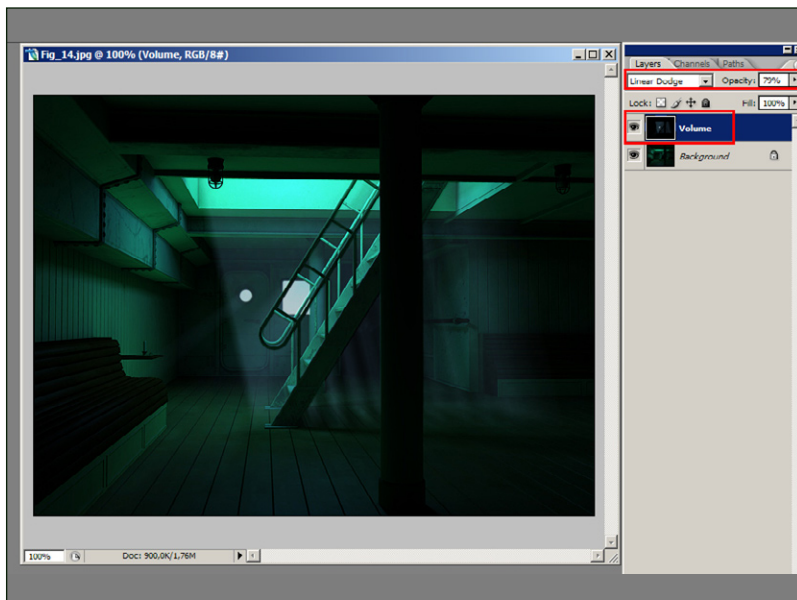
26. Copy the AO Pass and paste it over the original rendering. Change the Blending Mode for the AO Pass to Multiply and set its Opacity value to 70. (Fig26)

Fig 26



27. Flatten the two layers together. Import the Volume pass and paste it over the Background layer. (Fig27). Change the Blending Mode to Linear Dodge and set the Opacity value to 79%.

Fig 27



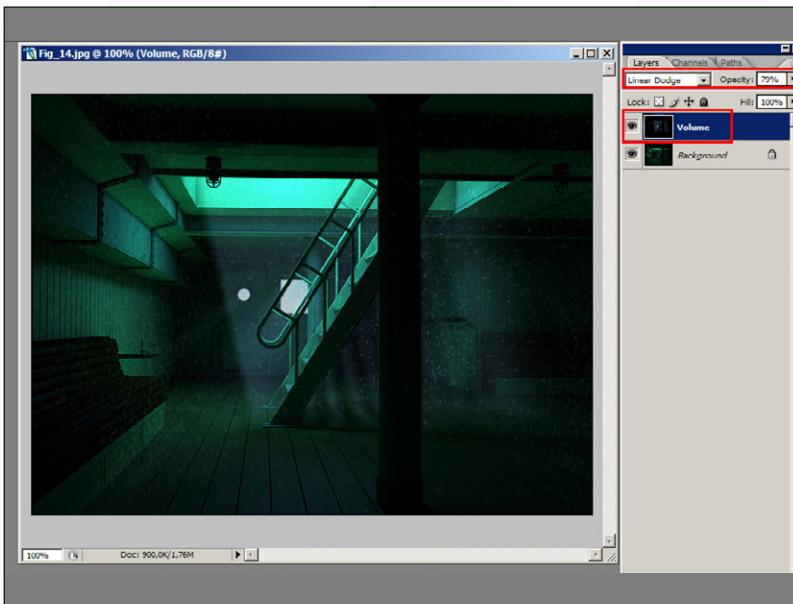


Fig 28

28. Flatten the layers again. Import the Particles pass and paste it over the Background layer. Change the Blending mode to Linear Dodge and change its opacity until you're happy with the result. You can make the bubbles and particles more or less evident; it's really up to you.

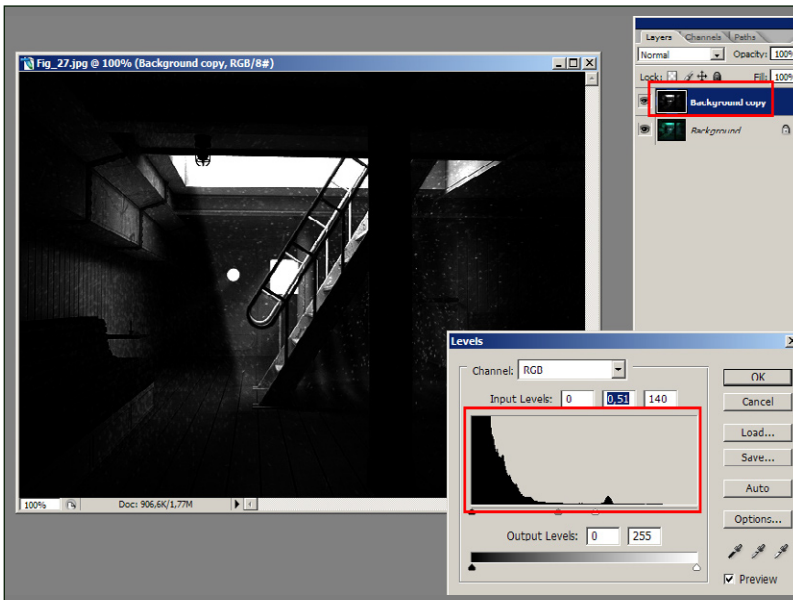


Fig 29

29. Flatten everything once again, and create a copy of the Background layer. Desaturate it and use the Levels tools to adjust its levels like shown in Fig29.

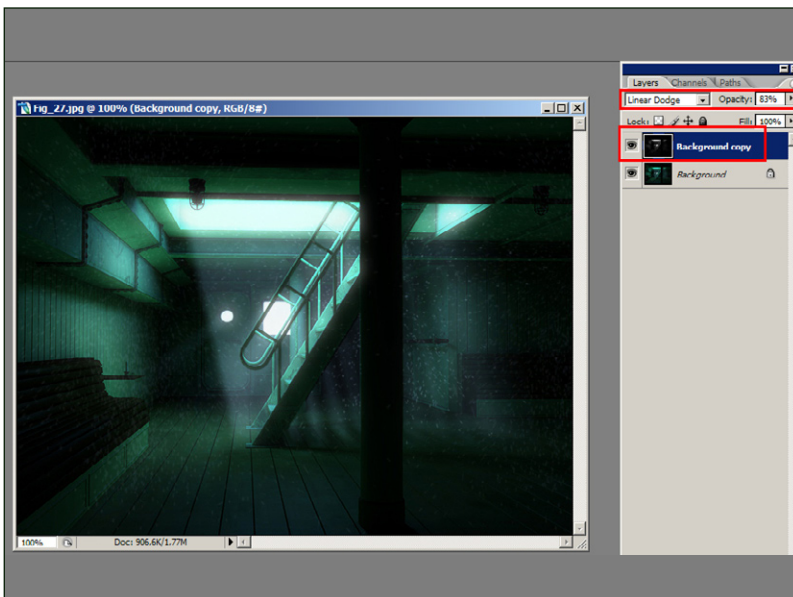
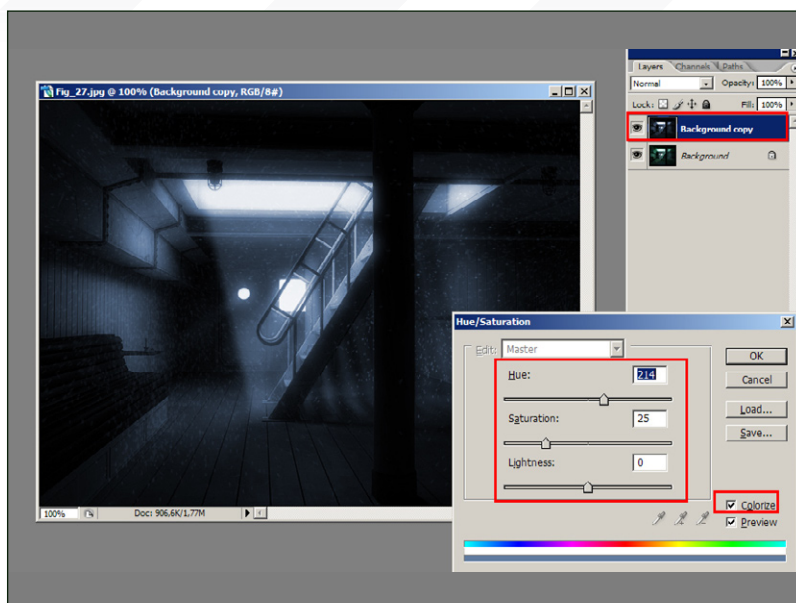


Fig 30

30. Apply a fair amount of Gaussian Blur to the top layer and change the Blending Mode to Linear Dodge. Also change the Opacity value to 83%.

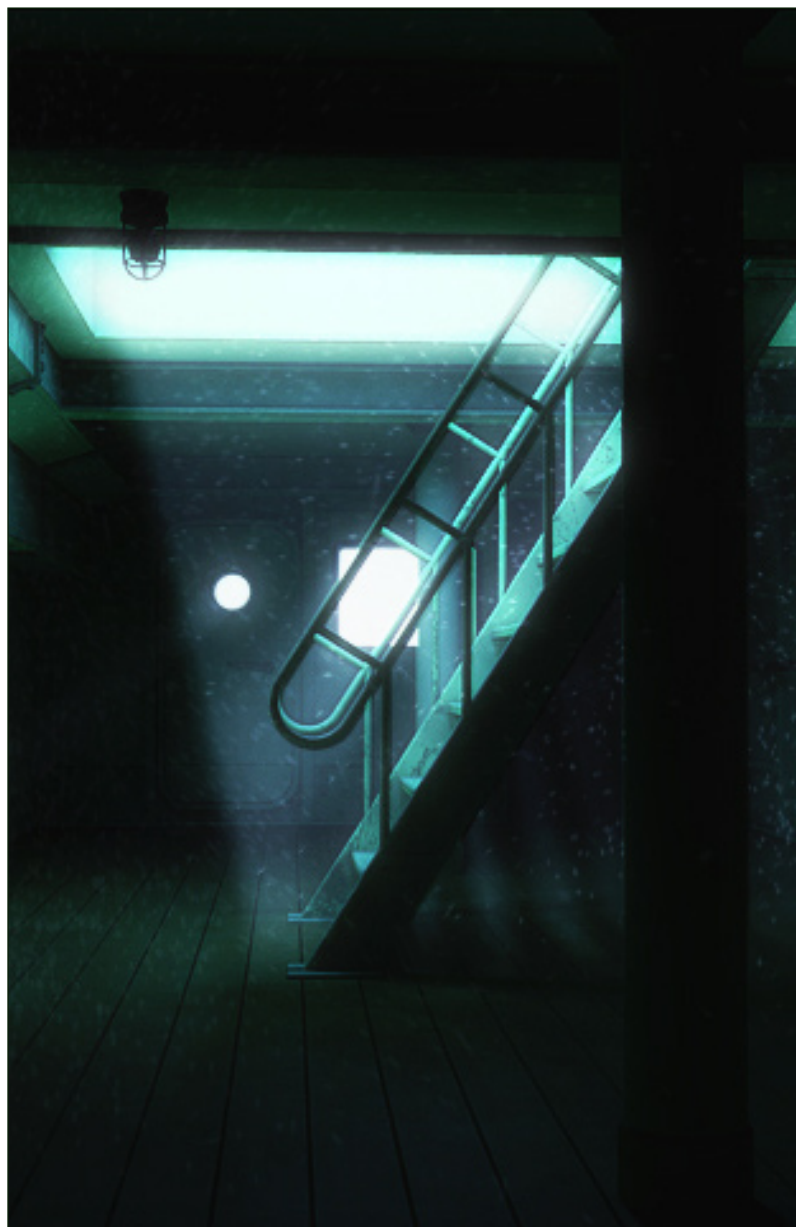
31. You can also colorize the top layer with a blue colour.

Fig 31



32. Finally, use the Exposure tool to enhance the exposure of the picture (Fig 32).

Fig 32



This concludes our environmental lighting series. I hope you found it of some use.

3D ENVIRONMENT LIGHTING PART 6 - UNDERWATER

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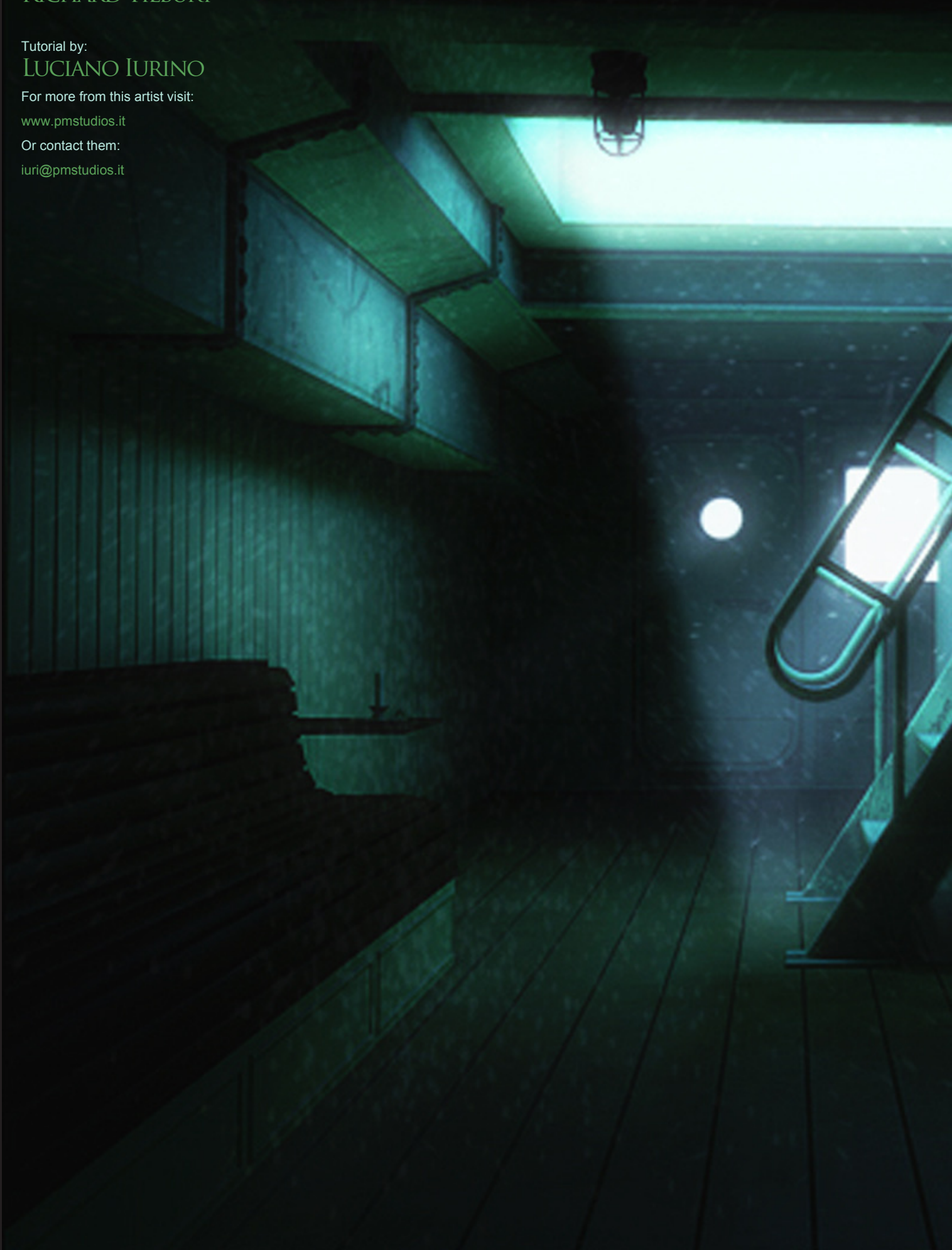
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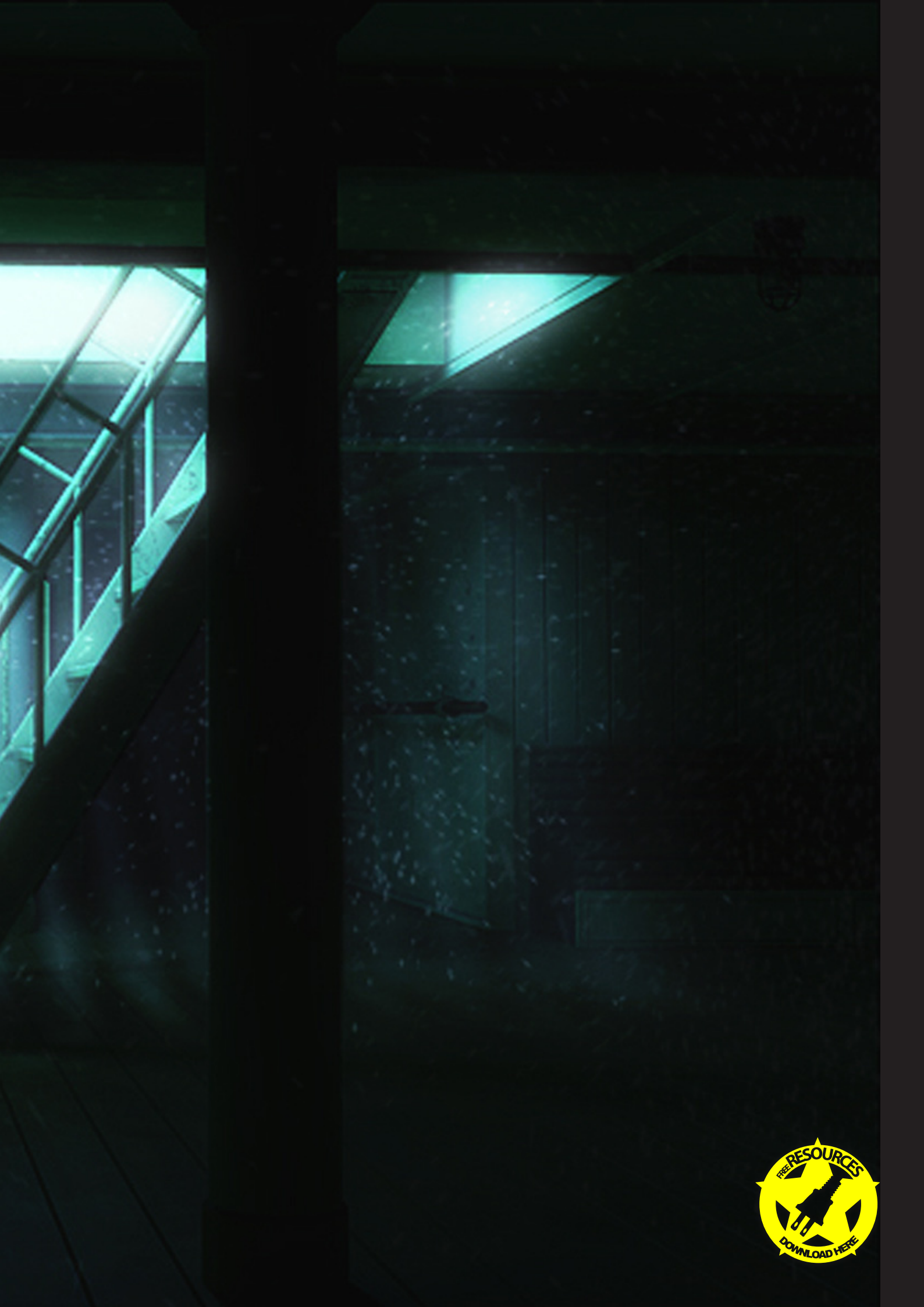
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ARTIFICIAL EXTERIOR LIGHTING UNDERWATER

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3D ENVIRONMENT LIGHTING PART 6 – UNDERWATER

Welcome back guys to this series of tutorials about Environmental Lighting. In this 6th tutorial we'll see how to create an artificial lighting situation for our ship cabin scene under a particular environmental condition : underwater. First of all, download the scene, it can be found at the end of this tutorial; click on the Free Resources logo.

1. I decided to illuminate the scene via three electric torches that the scuba divers use during their dives. (You may look for references on google.) This time we won't use the Radiosity because of the way the light reacts when it penetrates the water. I chose to put the three torches above the staircase, so our Main Light Source will be positioned as shown in Fig01.

2. As we did in the previous tutorials, in the Render Settings control panel, disable the AA and the Auto light, thus minimizing the render time. We'll enable the Antialiasing when we are ready for our final renders (Fig 02).

3. Create an Area Light, it can be found in the Objects menu > Scene > Area Light. Position the Area Light over the opening in the ceiling, making sure that the shape of the light coincides with the bottom edges of the opening as shown in Fig03. Create a Null Object and name it Lighting, then drag in the Area Light. This object will contain all the lights that we will add in the scene.

Fig 01

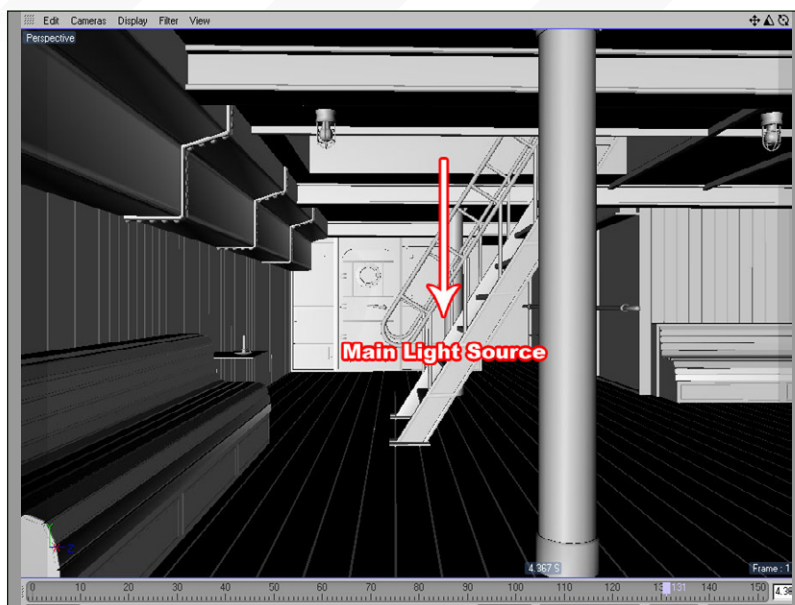


Fig 02

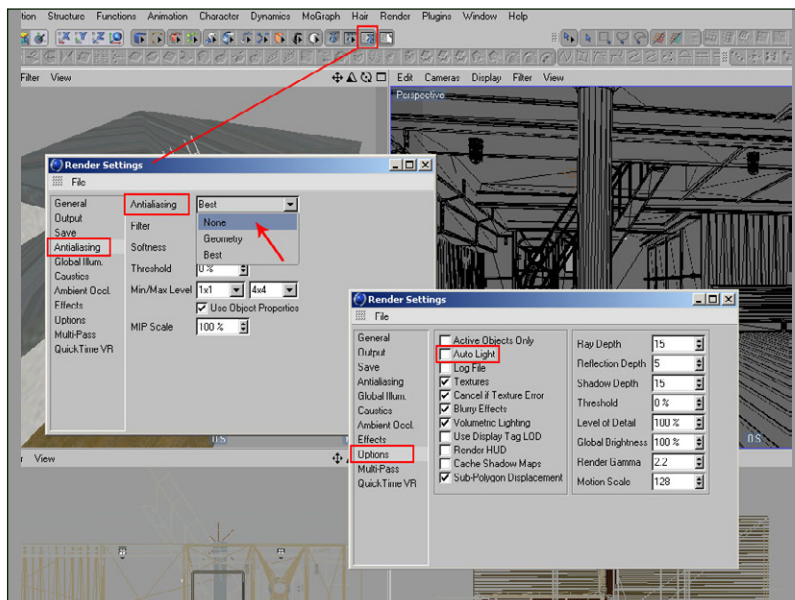
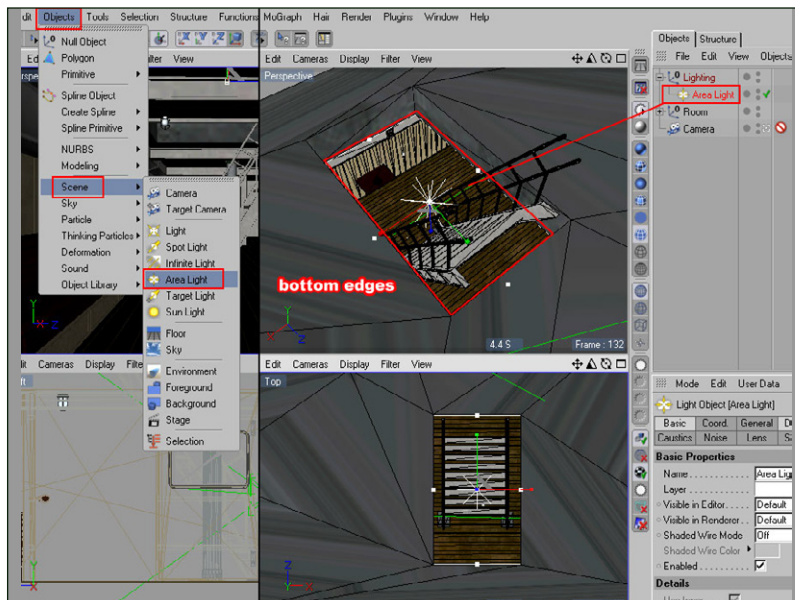


Fig 03



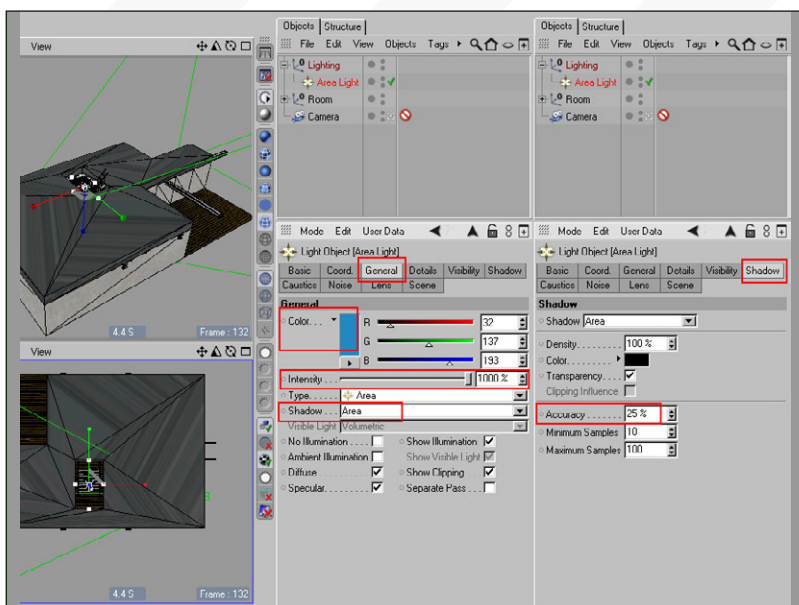


Fig 04

4. In the properties of Area Light, change the white default color to blue as seen in Fig04. Increase its Intensity to 1000% and select the Area Shadow. Go then into the Shadow control panel, and decrease the Accuracy to 25%.

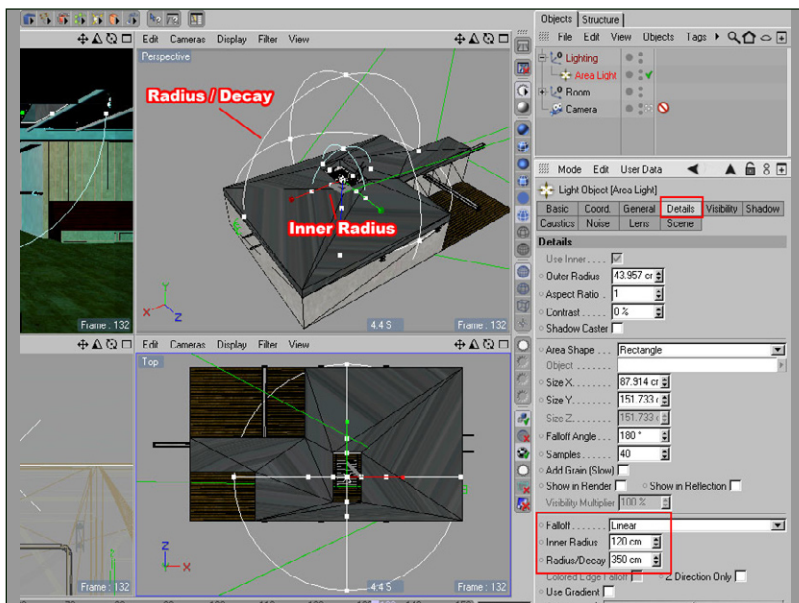


Fig 05

5. Still in the properties of Area Light, go into the Details control panel and enable the Falloff Linear. Modify the Inner Radius and the Radius/Decay as shown in Fig05. The Falloff allows the light not to have a continuous, linear brightness, as is the case in reality. In our case, the Inner Radius value is 120cm, this means that from 0cm to 120cm the brightness of the light remains constant. Outside of this boundary is where the Inner Radius falloff begins. The range between the Inner Radius and the Radius/Decay is where the brightness of the light changes from 100% to 0%. This Radius/decay indicates the maximum range that will be illuminated by the source light.

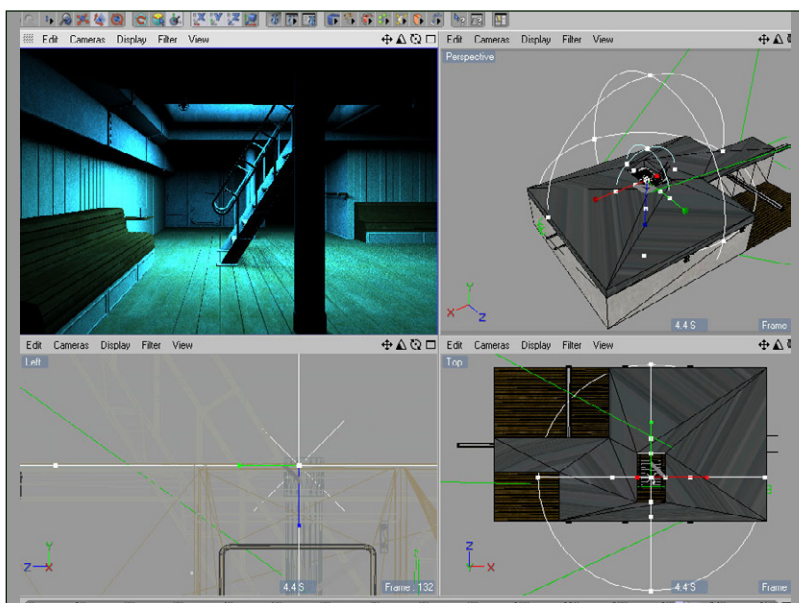
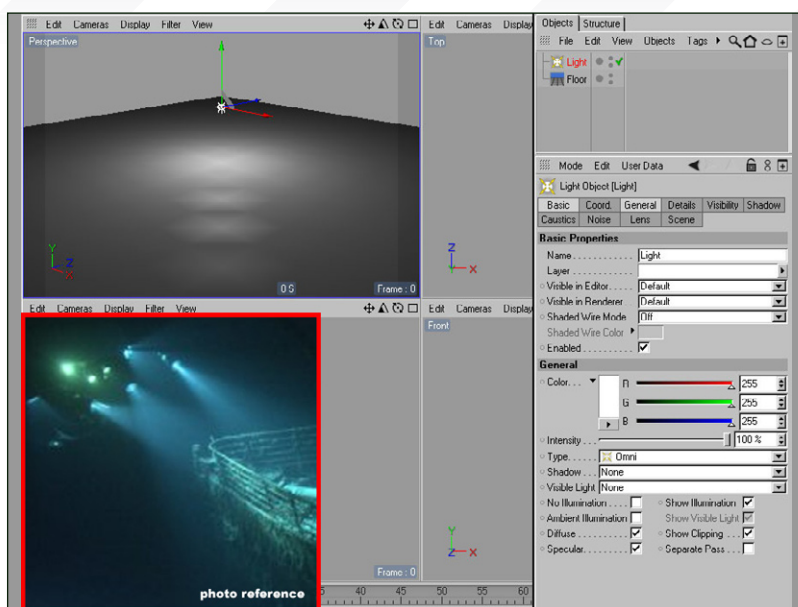


Fig 06

6. Make a render in the perspective view. Later we will assign a material to this light that will allow us to obtain the Caustic effect, which in this case will be "fake". (Fig06)

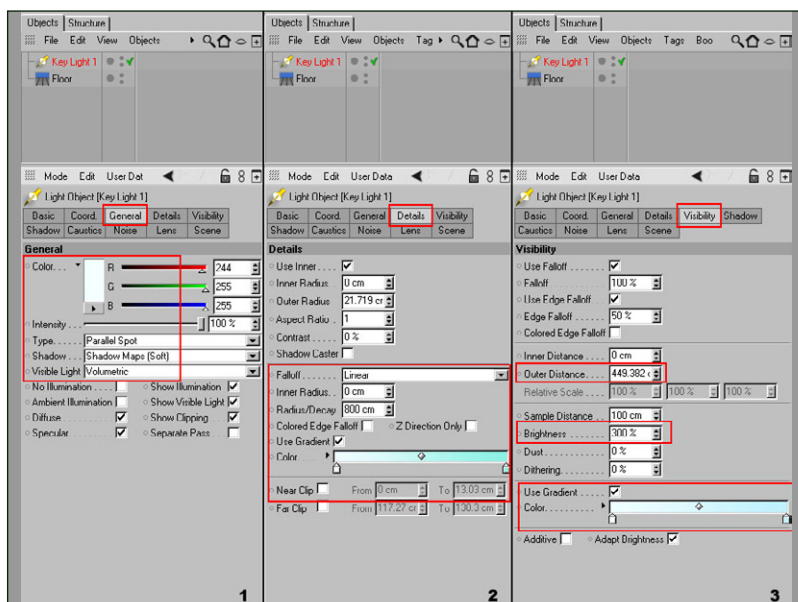
7. Now we have to create the light that simulates the electric torch of scuba diver. I found on the net the photo that you can see on the bottom left of Fig07. Here you can see from the image, this kind of light creates two visible bundles, a central bright cone and one more diffused, less bright. We will get the same result by using two lights. (I will do that in a new file, thus it will be more comprehensible.) So create a light as seen in Fig 07.

Fig 07



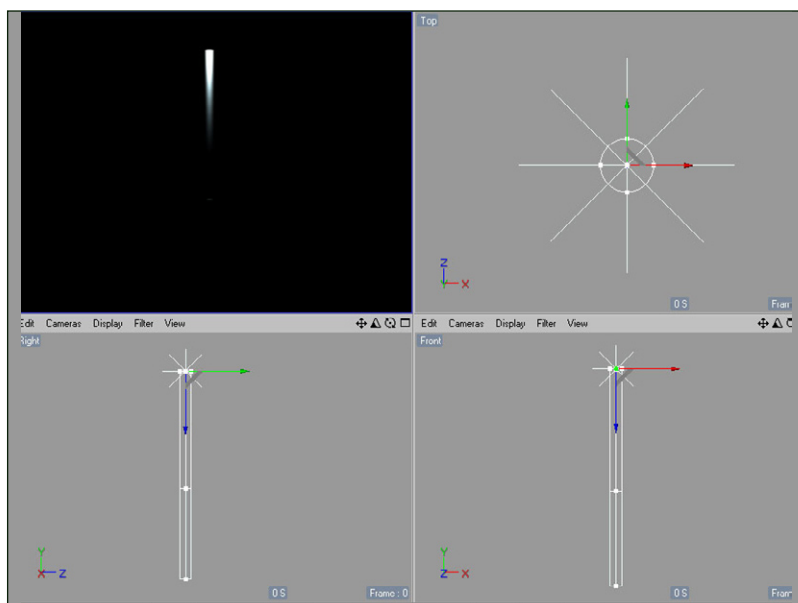
8. Go into properties. In the General control panel, change the white color to a very bright blue. Choose the Parallel Spot as Type of light, Shadow Maps as Shadow, Volumetric as Visible Light. (Stage1). In the Details control panel, Enable the Falloff, define the range of illumination so modify the Radius/Decay value as seen in Fig 08. Enable the Use Gradient option and change the colors of the gradient. (Stage 2). In the Visibility control panel, modify the Outer Distance, increase the Brightness to 300% and enable Use Gradient option. (Stage 3).

Fig 08



9. Make a render just to see how it appears. Fig09. Compare it with the photo reference to see if we have succeeded in recreating, or better still, in approaching the effect a real light would have. (Feel free to carry out your own tests).

Fig 09



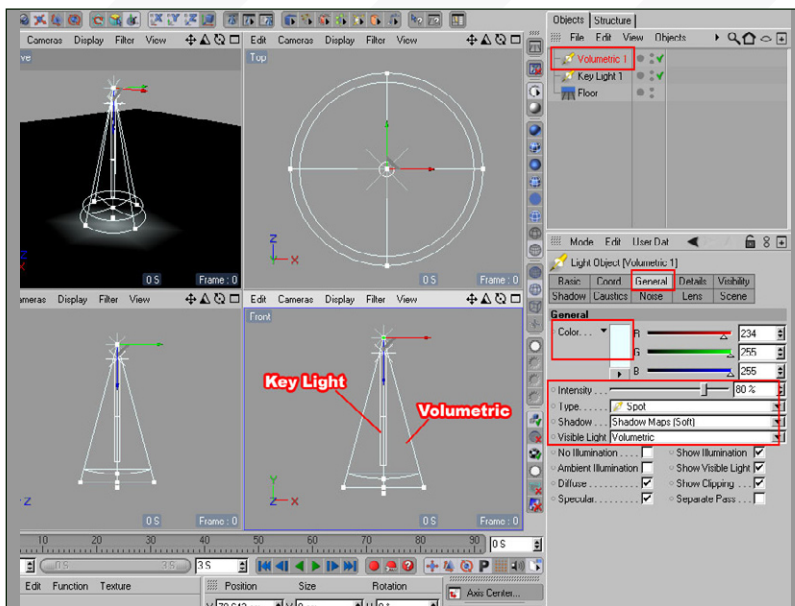


Fig 10

10. Now create a Spot light. Position it just over the Key Light 1 as shown in Fig10. The color of this light will be bright blue. Decrease its Intensity to 80%, select the Shadow Maps and select the Volumetric as Visible Light.

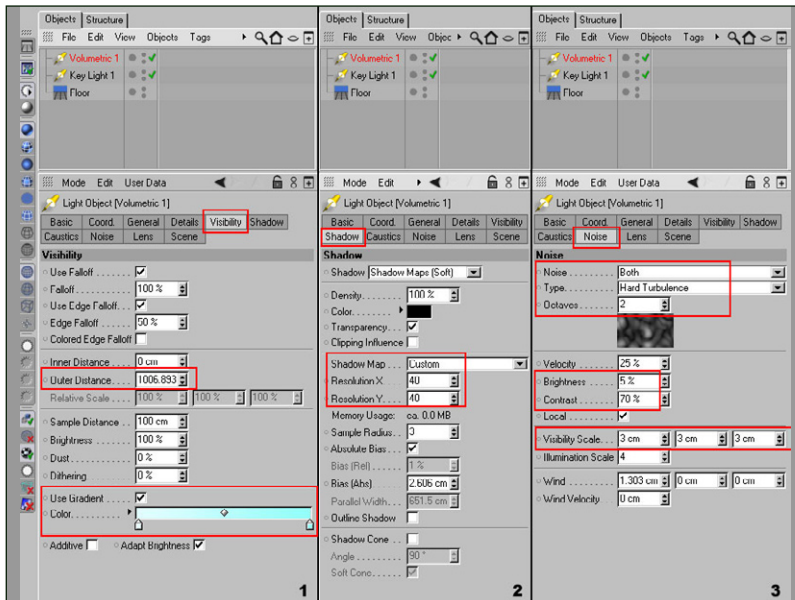


Fig 11

11. In the Visibility control panel, modify the Outer Distance, enable the Use Gradient option then change the colors of the gradient as seen in stage 1 of Fig11. In the Shadow control panel, change the default resolution to Custom with a value of 40. (Stage 2). In the Noise control panel, enable the Noise, then change the type and decrease the Octaves. Give the Brightness a value of 5% and decrease the Contrast to 70%. Reduce the Visibility Scale to 3cm. Stage 3.

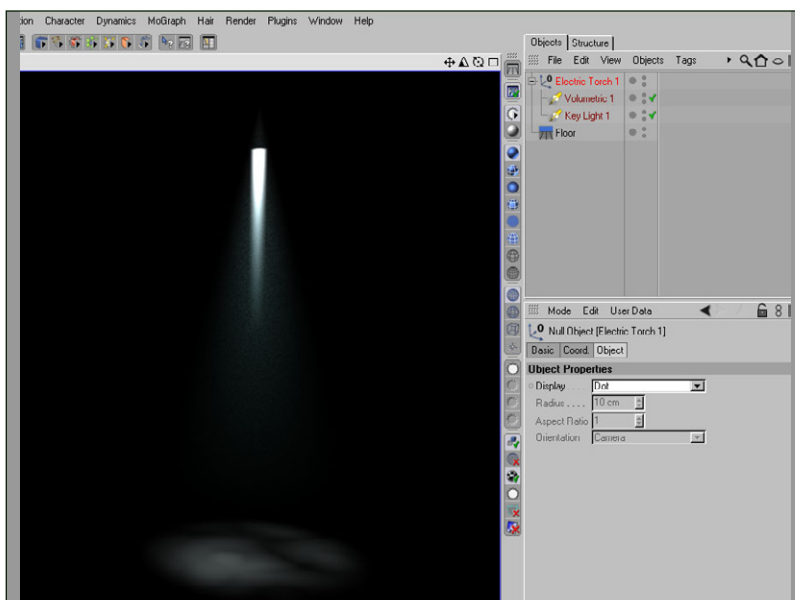
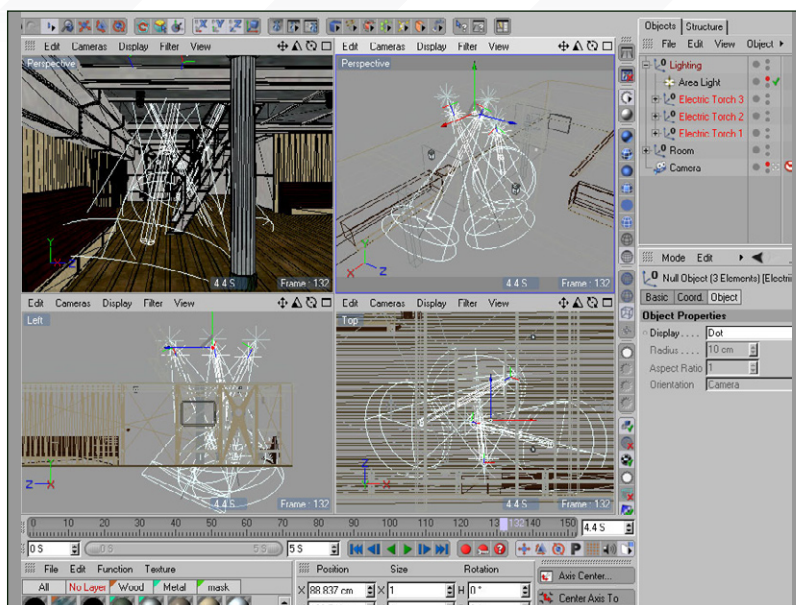


Fig 12

12. Make a render. Fig12. Create a Null Object and name it Electric Torch 1, then drag in the two lights that I named Key Light 1 (Parallel Spot) and Volumetric 1 (Spot).

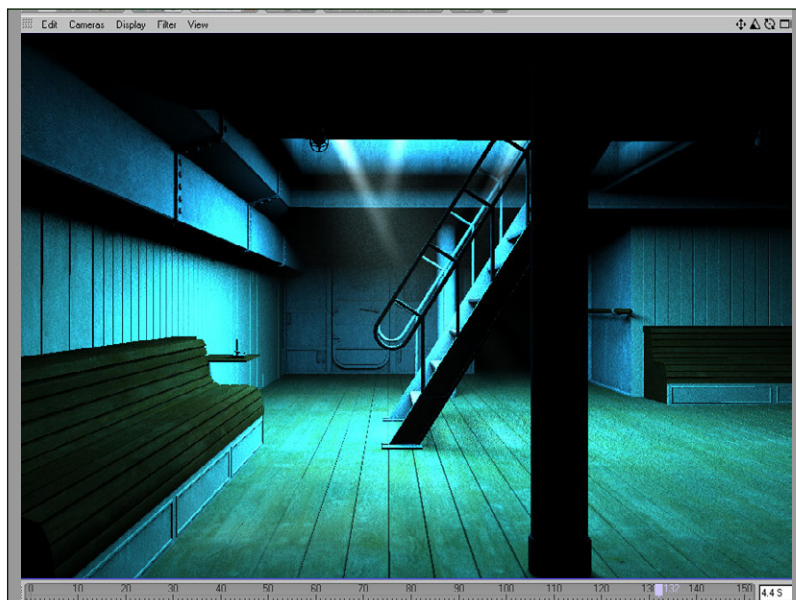
13. Position the Electric Torch 1 as you like and then make two copies of this object. Position the Electric Torches as you see fit.

Fig 13



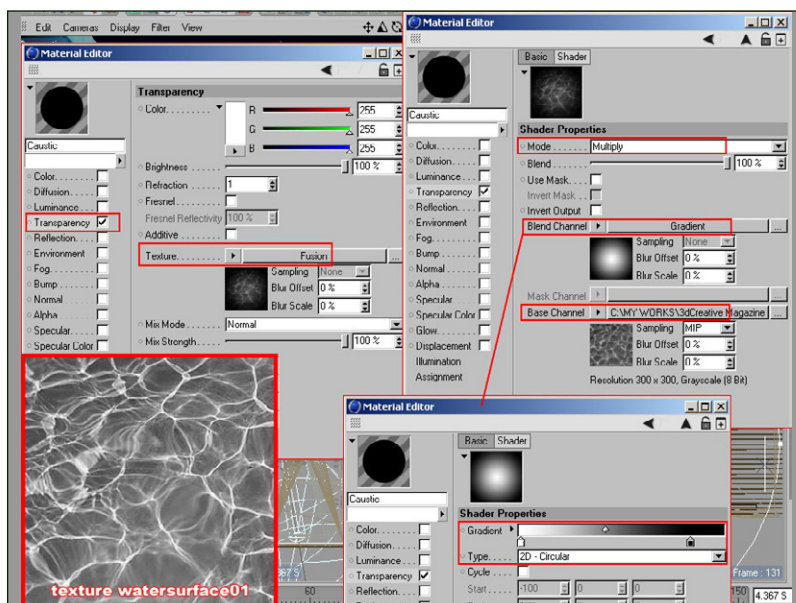
14. Make a render. Fig14. Now the Area Light seems to be very strong and it makes the other lights less visible, but don't worry about this now, the Area Light will become less bright when we apply the material that I mentioned earlier.

Fig 14



15. So, in the Material Manager, create a new material and enable only the Transparency channel. Fig15. In the Texture load the Fusion shader. This shader will allow you to combine two textures with a mask using the modes standard in photo editing applications. In the Shader properties, load the texture "watersurface01" (that you downloaded with the scene) as Base Channel. In the Blend Channel load the shader Gradient. The Gradient will be 2D - Circular. Choose Multiply as Mode.

Fig 15



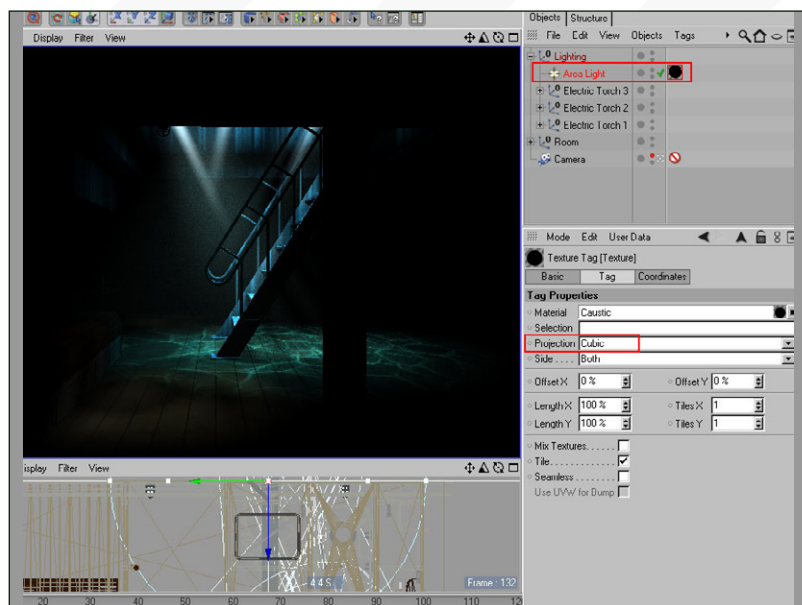


Fig 16

16. Apply the material to the Area Light, assign the Cubic projection. Make a render. Fig16. Now you can see from the image, the light projects the shader onto the floor.

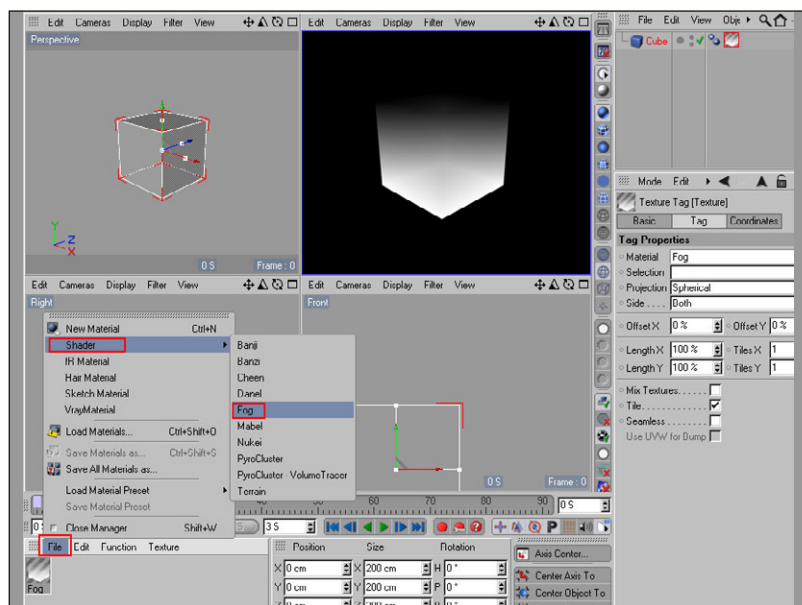


Fig 17

17. Another element that makes this scene like an underwater scene is the Fog. As you know, Cinema 4d has its own shaders so we may use the Fog shader here. Create a cube then in the Material Manager, load the shader Fog. Assign the material to the cube as seen in Fig17.

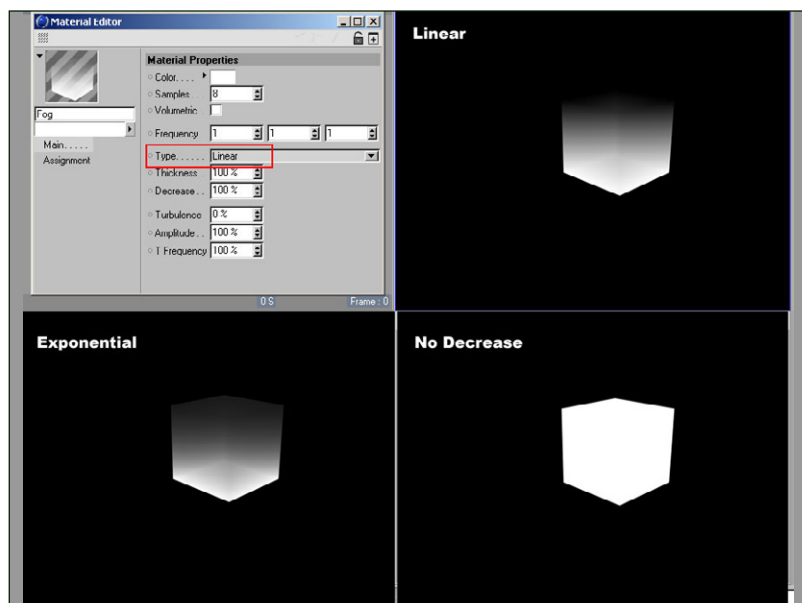
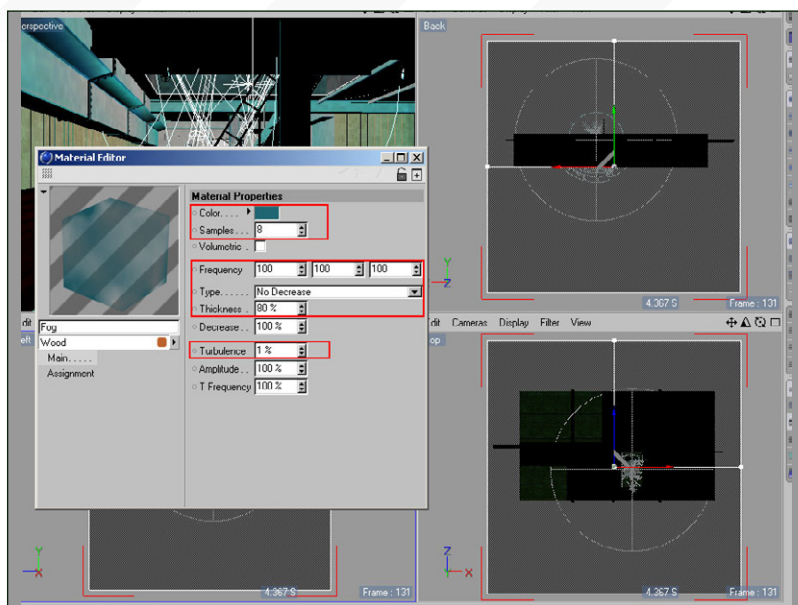


Fig 18

18. Open the Editor material of Fog. You can see from Fig18. that you can change the color and the Samples that define the quality of the fog, (the higher this number, the longer the calculation time). If the Volumetric options are disabled, the light sources will have no effect. With Volumetric enabled, all light sources will be taken into account. (Volumetric adds greatly to render time). Frequency defines the detail in the X,Y,Z directions. You can choose among three different types: Linear and Exponential decrease the fog intensity along the Y axis of the texture. No Decrease means constant fog density. The lower the Thickness value, the thinner the fog. Decrease controls the depth of the fog. Turbulence specifies the degree of swirl within the fog. Amplitude defines the average size of the rotating turbulence cells. T-Frequency controls the speed of the swirling fog (Fig 18).

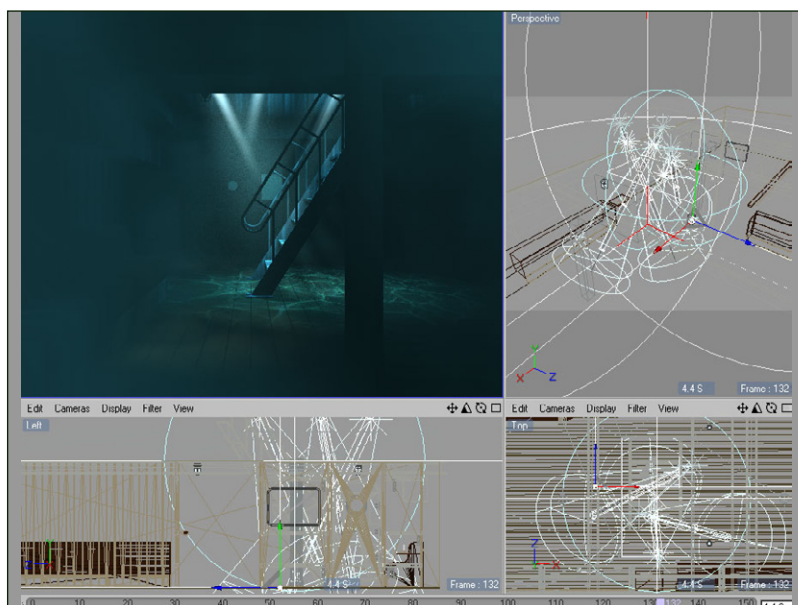
19. Modify the properties of the Fog material as seen in Fig19. The dimensions of the cube should cover the whole ship cabin.

Fig 19



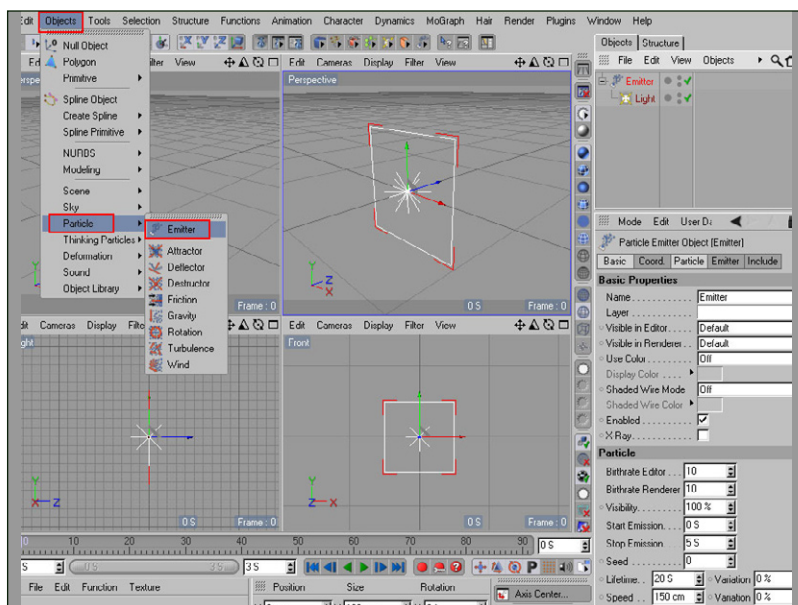
20. Make a render just to see how it's coming along.

Fig 20



21. Last thing to do is to add some particles floating as the render still looks very clean. I will use an Emitter with a light. So form the Objects menu, select Particle > Emitter. Then create a light and drag it into the Emitter object. Fig21.

Fig 21



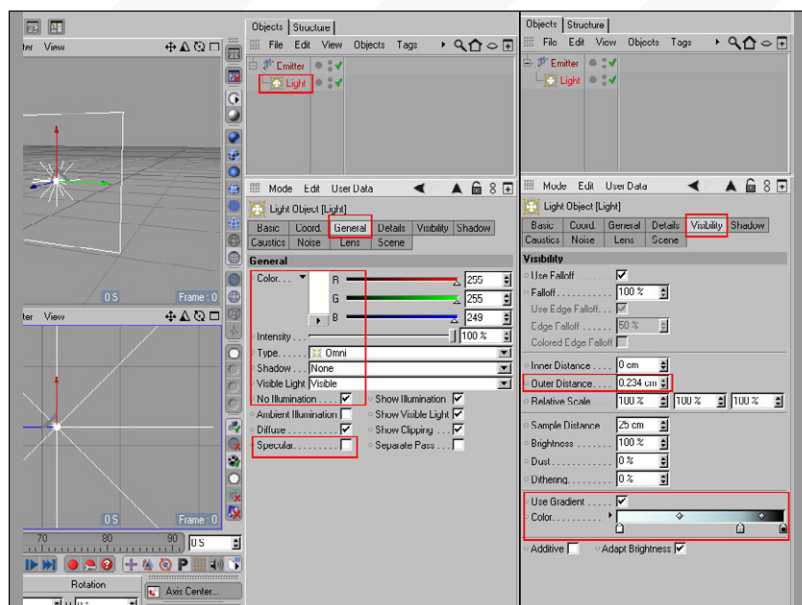


Fig 22

22. In the light properties, choose the Omni as type of the light, use the Visible light and check the No Illumination option. This light won't generate light. Uncheck the Specular option. In the Visibility control panel, decrease the Outer Distance; this light should be very small. Use the Gradient and change the colors as shown in Fig22.

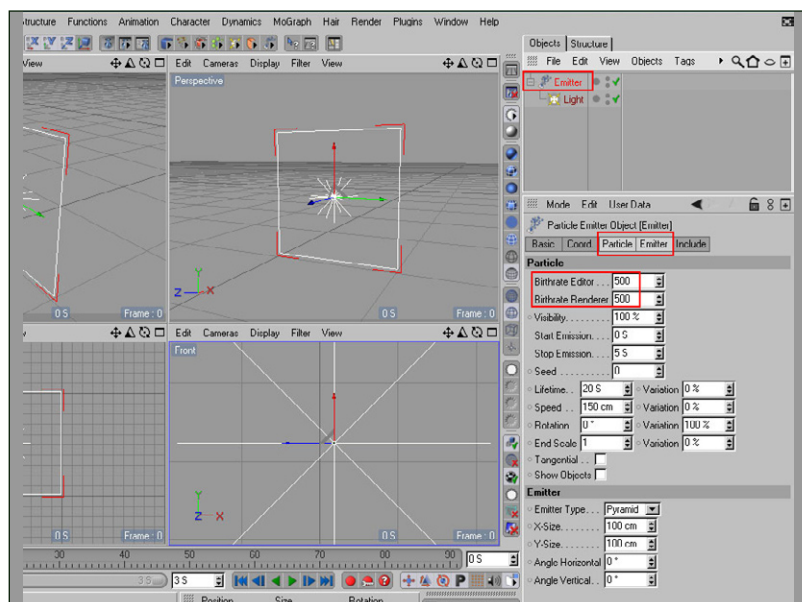


Fig 23

23. In the Emitter properties, increase the Birthrate as seen in Fig23. That means the number of the issued particles will be equal to the value that we set.

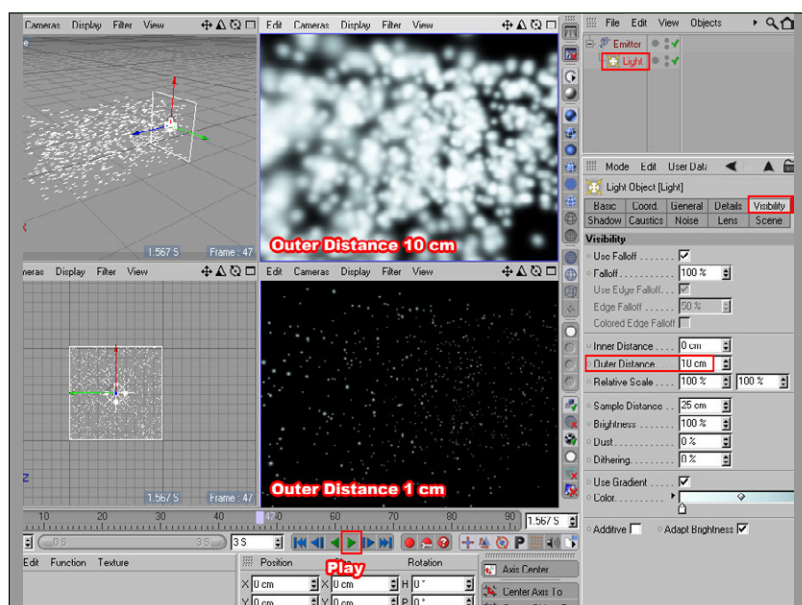
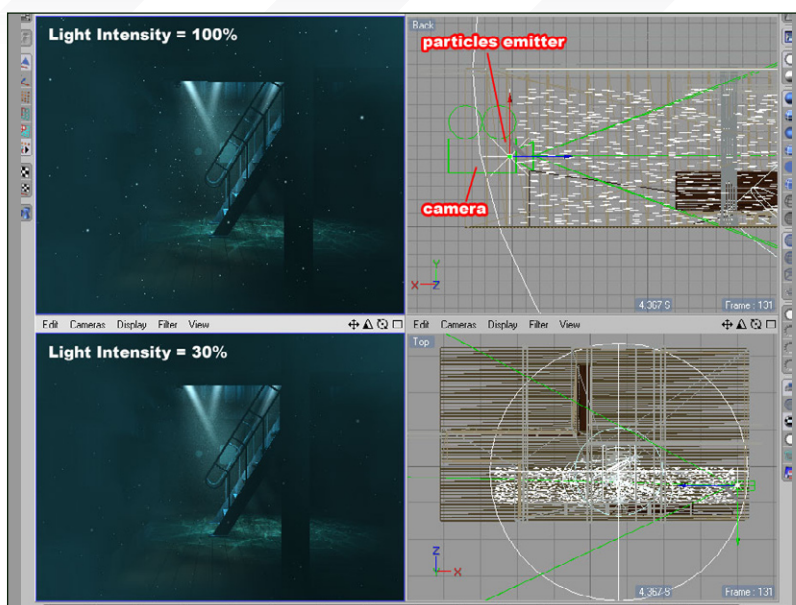


Fig 24

24. Click on Play; the emitter will start to generate the particles. In Fig24 you will notice two different results.

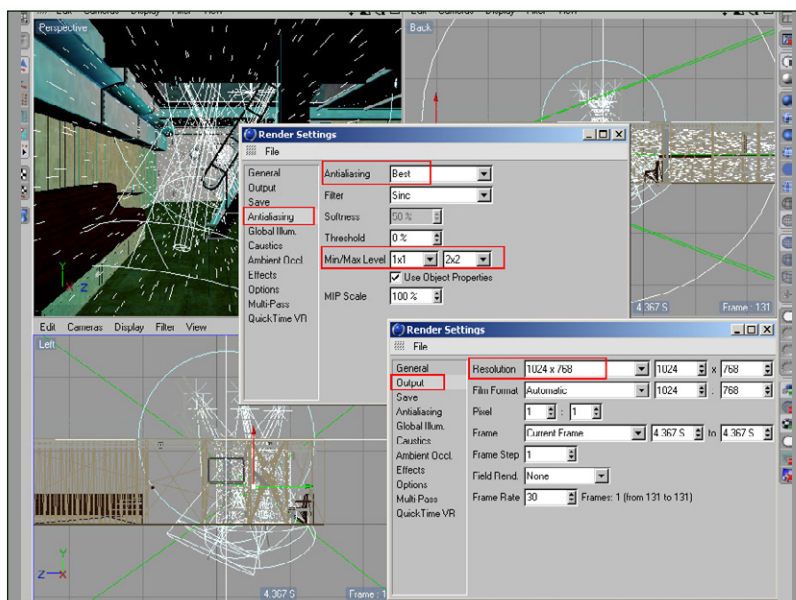
25. Position the Emitter to your liking. I chose to position the Emitter behind the camera as shown in Fig25. You may also decrease the Intensity of light as seen on the left. My settings for the light are the following: Outer Distance = 0.24; Intensity = 30%.

Fig 25



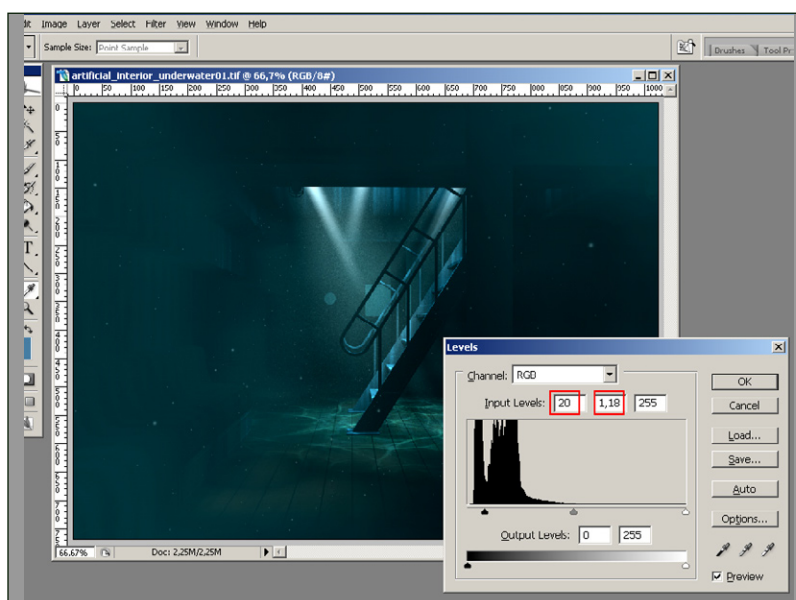
26. Well, I think we are ready for our final render. Open the Render Settings and enable the Antialiasing. Fig26. Choose a resolution for your render and then make the render in the Picture View.

Fig 26



27. Fig 27 shows the final render. The fog has homogenized the colors and our scene has lost a bit of contrast.

Fig 27



We can edit our image with Photoshop. We need just to add a bit of contrast, so open the Levels panel (you can find it in the Image > Adjustments > Levels) and modify the Input Levels as shown in Fig27.

That is all for this month and the series. I hope you had a good time in following the tutorial ...

Thanks to all who have followed this series of tutorials about environmental lighting.

3D ENVIRONMENT LIGHTING PART 6 - UNDERWATER

Originally Designed & Modelled by
RICHARD TILBURY

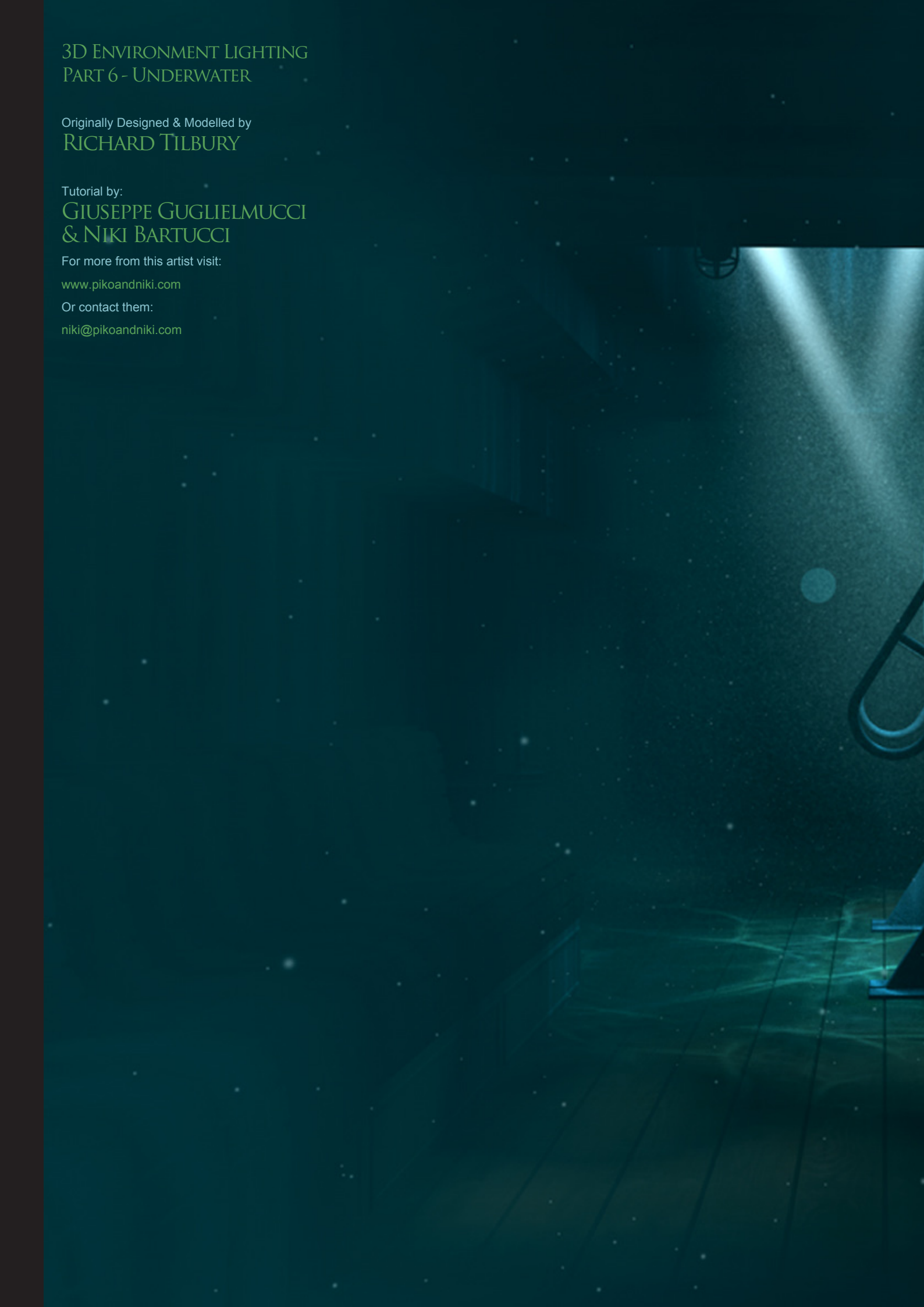
Tutorial by:
**GIUSEPPE GUGLIELMUCCI
& NIKI BARTUCCI**

For more from this artist visit:

www.pikoandniki.com

Or contact them:

niki@pikoandniki.com





3D environment lighting



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ARTIFICIAL INTERIOR LIGHTING ELECTRICAL

Issue 027 November 2007

ARTIFICIAL INTERIOR LIGHTING CANDLELIGHT

Issue 028 December 2007

ARTIFICIAL EXTERIOR LIGHTING UNDERWATER

ENJOY ...

3D ENVIRONMENT LIGHTING – PART 6 – UNDERWATER LIGHTING

Welcome to the last part of the 3D Environment Lighting tutorial series. In this instalment our ship is sunken – so we will cover the creation of an underwater scene. The scene setup will be quite different this time, and it requires some post work in your favourite image editing software as well.

1. Let's get started by choosing a background. As before, we are going to add a Gradient Backdrop. This will be visible through the big window in the back and it will also affect Radiosity. In the Effects window go to the Backdrop tab and use a dark green color for Sky Color and Ground Color. A blue green color should be good for Zenith Color and Nadir Color. For Sky Squeeze and Ground Squeeze we use a value of 20.0 (Fig 01)

2. While in the Effects window go to the Volumetrics tab. Change the Fog Type to Linear. Min Distance = 1.28 m; Max Distance = 30 m; Min Amount 8 %; Max Amount 60 %. As you see we choose a pretty high fog level. This is to reflect that we are in dirty water with lots of dust floating around. To underline this even more, we are using a green fog color similar to the green we used for Sky Color in the backdrop settings (Fig02).

3. In this kind of deep water, there would not be much light shining into our interior. So we imagine a submarine is swimming above the big entrance, and its searchlights are shining directly down the ladder. We add a spotlight with a Spotlight Cone Angle of 5.0° and a Spotlight Soft Edge Angle of 3.0°. Use the following parameters for the light: Color = Cyan; Light Intensity = 170.0%; Intensity Falloff = Inverse Distance ^ 2; Range = 10 m. The resulting light will have a very long and thin cone of light. Place the light above the entrance. Make a clone and move it to a slightly different position – this resembles a second independent searchlight on the submarine (Fig03).

Fig 01

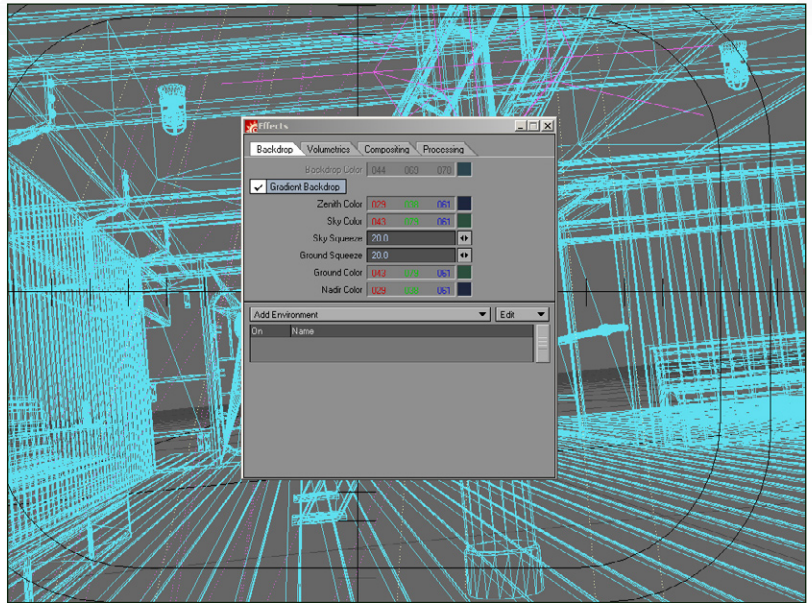


Fig 02

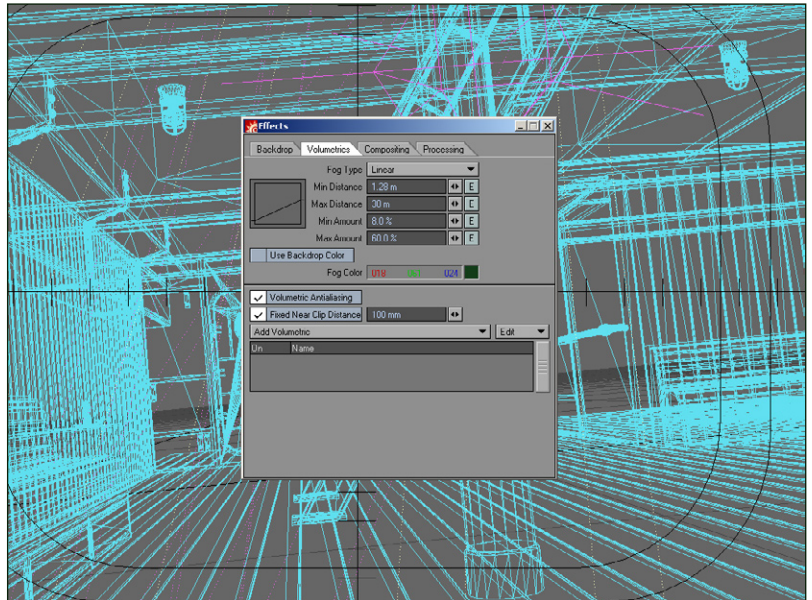
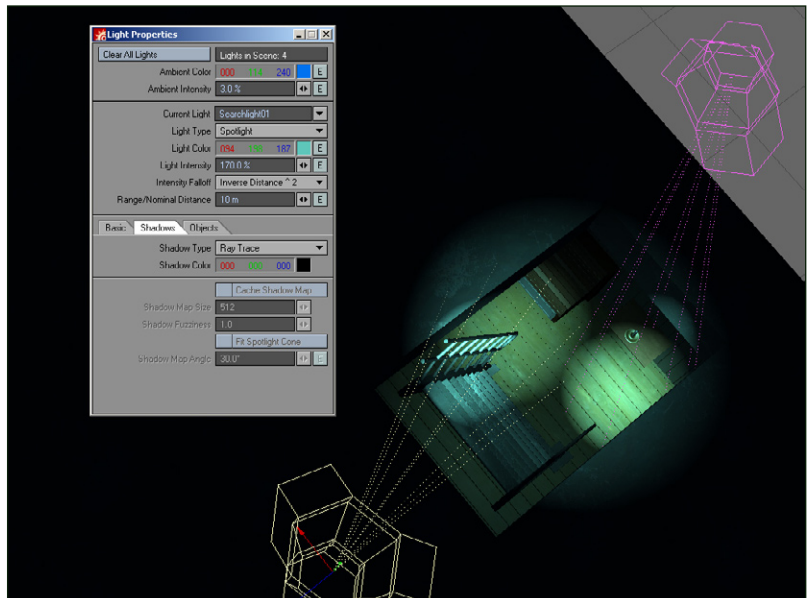


Fig 03



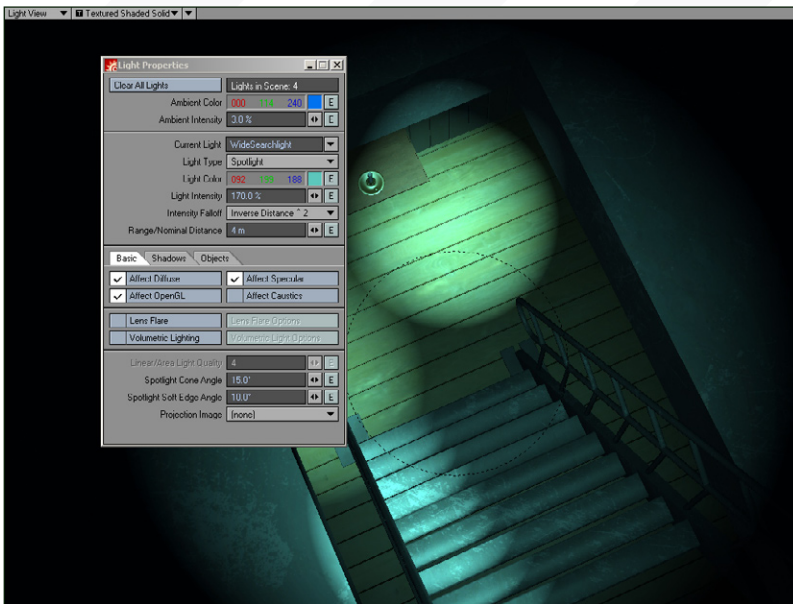


Fig 04

4. Another light with a wider cone of light will be shining in from above. On submarines this would be used to illuminate the closer distance of the submarine. For us it means that the area around the sharp searchlights is also getting a bit more light. So we make another light clone and place it somewhere between the other 2 searchlights. We change only the following settings: Spotlight Cone Angle = 15.0°; Spotlight Soft Edge Angle = 10.0°.

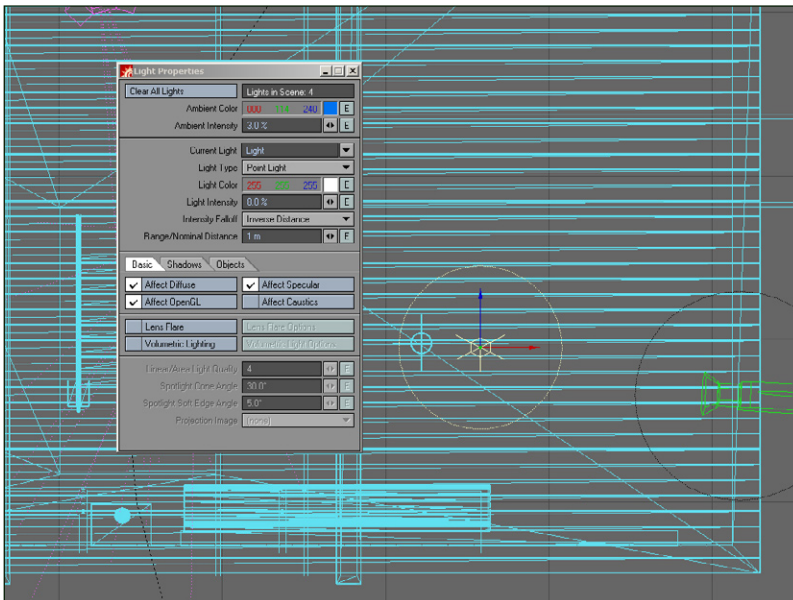


Fig 05

5. The area directly in the front of the camera would still be very dark. So in order to have something visible in the foreground, we need a fill or camera light. Add a point light and place it in front of the camera. Make it white, with a Light Intensity of 8.0%. We use an Inverse Distance Intensity Falloff with a Range of 1 m. Turn off the shadows for this light, as it only simulates diffuse reflected light.

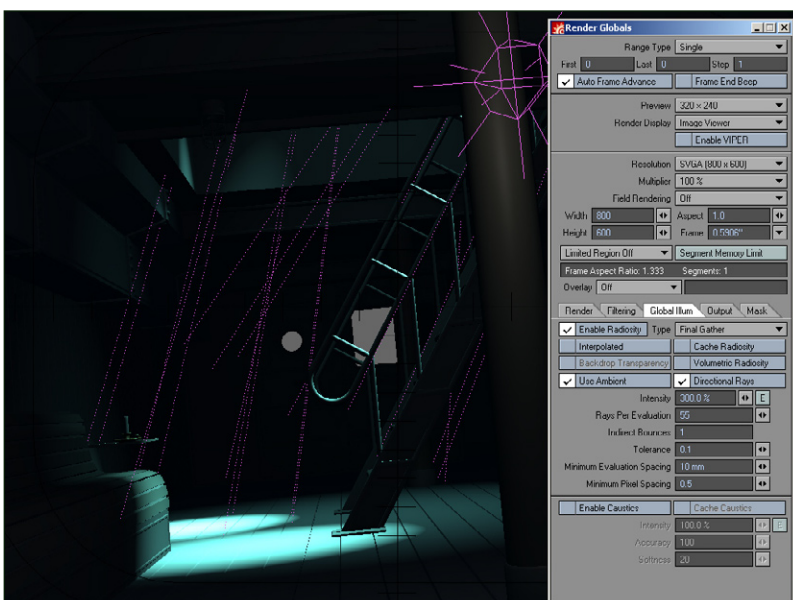
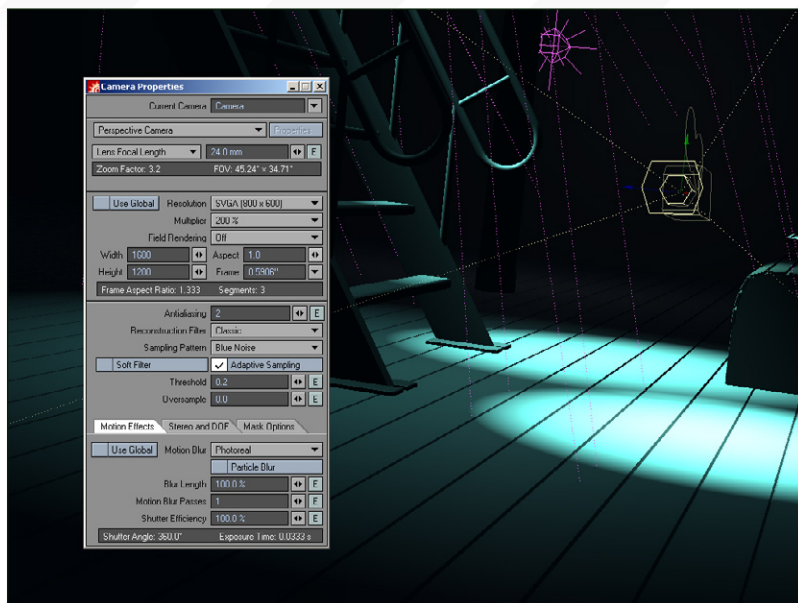


Fig 06

6. In Render Globals make sure to check Ray Trace Shadows. Ray Trace Reflection can be checked as well, but it means longer render times. Then change to the Global Illumination tab and Enable Radiosity. As Type choose Final Gather. If you are using older versions of Lightwave you can also use the Monte Carlo setting with interpolation. Check Use Ambient and Directional Rays. Intensity = 300 %; Rays Per Evaluation = 55; Indirect Bounces = 1; Tolerance = 0.1; Minimum Evaluation Spacing = 10 mm; Minimum Pixel Spacing 0.5.

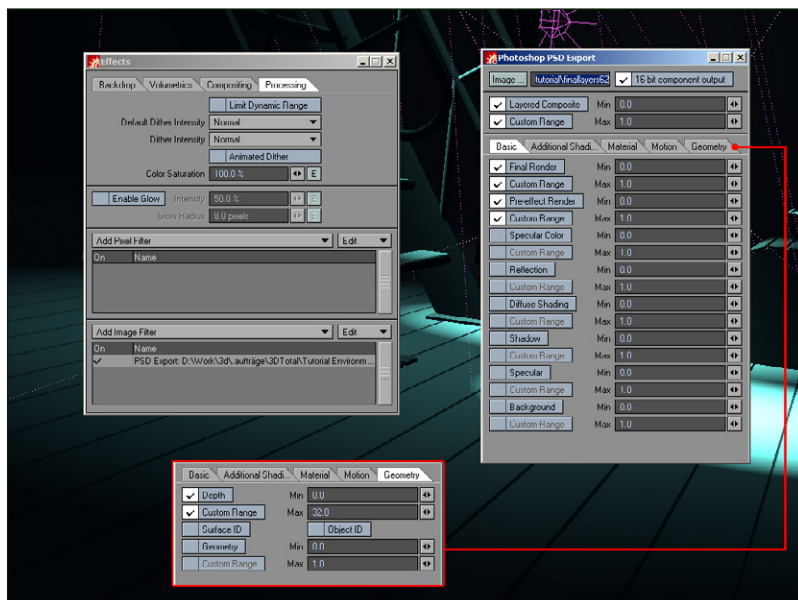
7. Don't forget to change your Camera Properties. Our scene will be somewhat dirty anyway, so you can use a rather low Antialiasing level of 2 with an Adaptive Sampling Threshold of 0.2. The resolution I am rendering at is 1600x1200 pixel.

Fig 07



8. Now we are ready to render. As we like to render out layers, go to Effects window. Click Add Image Filter to add PSD Export. Choose an Image Path where the file should be saved. For us the most important setting is the Depth layer, you can check this in the Geometry tab. Make sure to render via Render Scene (F10), so the Image Filter works correctly and your image is saved.

Fig 08



9. Have a look at the rendered image! Not bad for now. Of course we have a few things missing. First of all, the Ambient Occlusion. And most importantly we don't have any volumetric light. We render all these elements separately as it reduces render times to a minimum and also gives us full control over the look of the image in compositing.

Fig 09



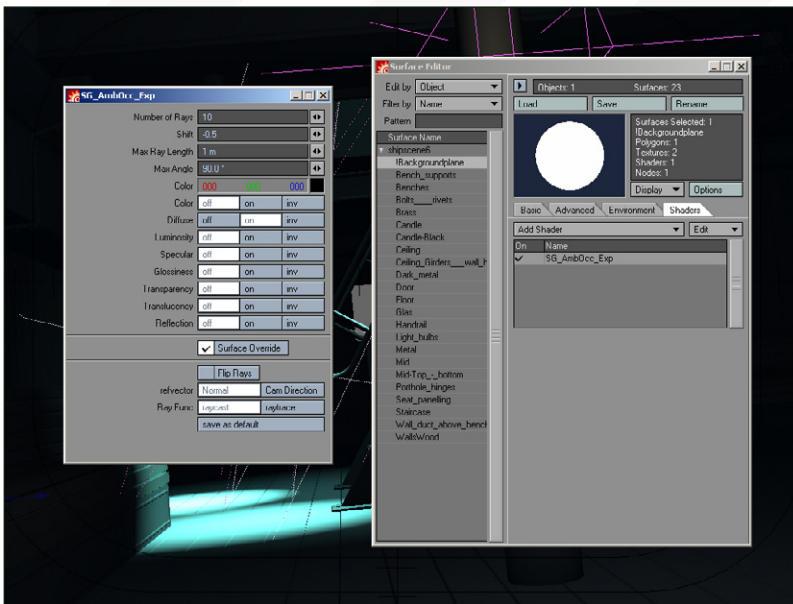


Fig 10

10. Make a copy of the scene and object for our Ambient Occlusion pass so you don't accidentally destroy your progress so far. Go to Surface Editor, change to Shaders tab and add the Shader SG_AmbOcc_Exp. Make sure the Surface Override is checked, the other settings can remain untouched. Copy the surface you just applied the filter to. Select all surfaces – remember that you just have to press SHIFT on your keyboard to do multiple selections – then paste it to all the other surfaces in the scene. Now all surfaces should have the AO Shader applied.

Note: SG_AmbOcc_Exp is a free Ambient Occlusion Plugin that you can find and download via the great www.flay.com database.

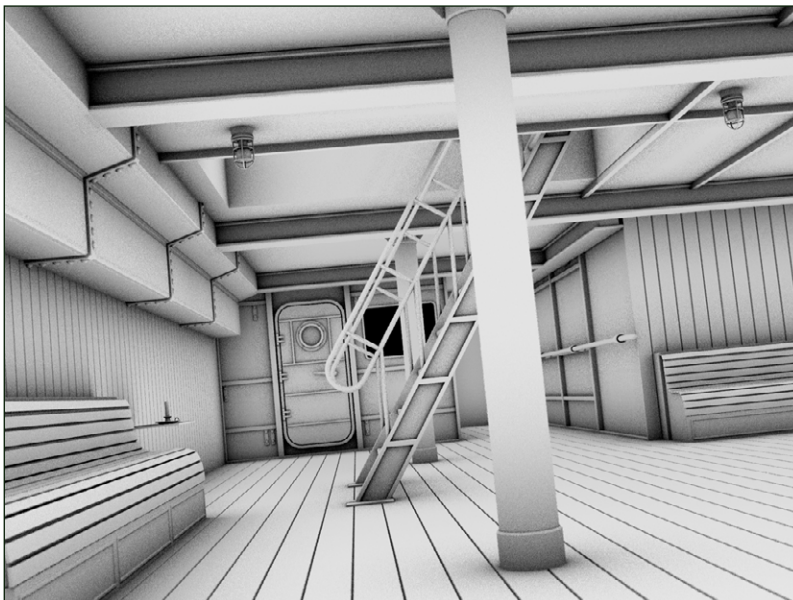


Fig 11

11. Deactivate the Fog, the PSD Export Filter and also disable Radiosity before you hit render! Use the same camera resolution and antialiasing setting as for the last render. Have a look at the image. Areas that are hard to reach for light appear black, the rest is white or grey (Fig11).

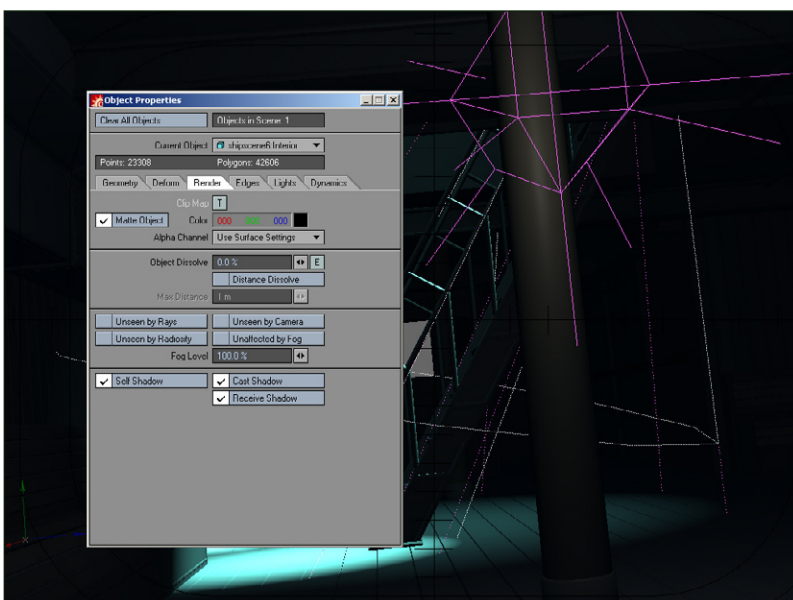
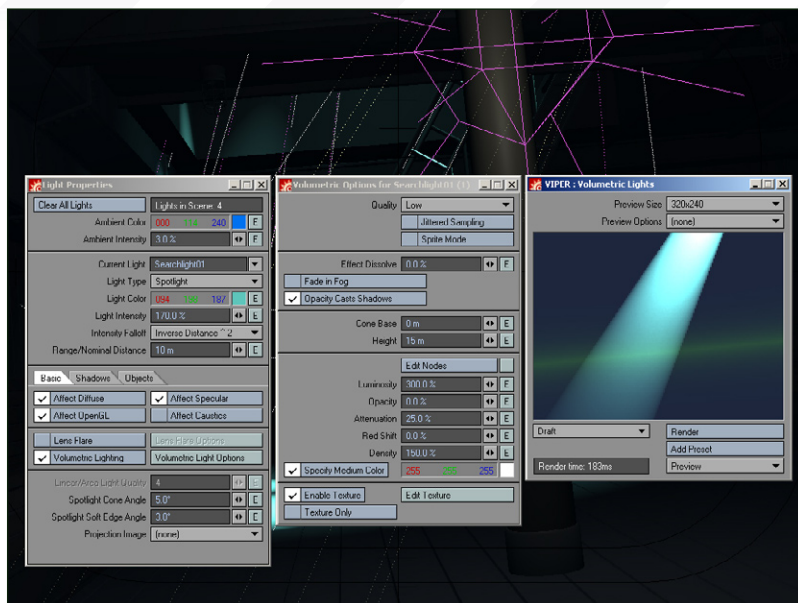


Fig 12

12. Now make another copy of the scene. We are going to create the volumetric effects as a separate layer. In Object Properties check Matte Object for our ship interior object. Make sure the Matte Color is set to black.

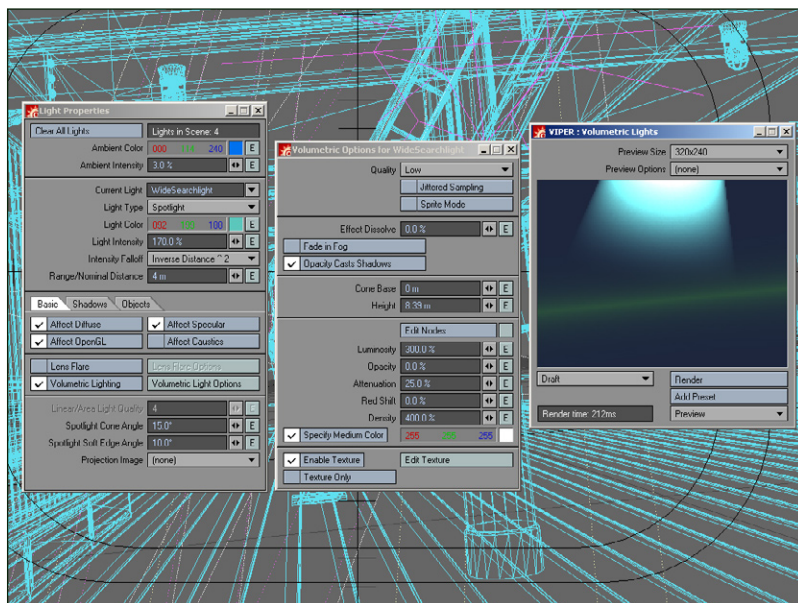
13. Select our first Searchlight and go to Light Properties. Check Volumetric Lighting. In the Volumetric Options use the following settings: Quality = Low; check Opacity Casts Shadows; Cone Base = 0 m; Height = 15 m; Luminosity = 300.0 %; Opacity = 0.0 %; Attenuation = 25.0 %; Red Shift = 0.0 %; Density = 150.0 %. You can also add some fractal noise procedural filter as texture if you like. Keep in mind, that you can activate Viper to get feedback for your parameter changes. This way you can adjust the volumetric effects more easily.

Fig 13



14. For the other 2 searchlights, activate Volumetric Lighting as well. The second "sharp" searchlight has the same settings as the first. For the wide searchlight choose a height of 8.39 m and a Density of 400.0 %. The other parameters don't have to be changed.

Fig 14



15. Now render your Scene – again make sure to turn of Radiosity and the PSD Export filter. In the rendered image, we see nothing but the volumetric lights. By now we have rendered 3 independent passes – the base scene as layered PSD, the ambient occlusion pass and now the volumetric lights. It is time to bring all the elements together!

Fig 15





Fig 16

16. Open up Photoshop or any other image editing software that supports Layers and the PSD format. Copy the AO pass and paste it into the layered PSD file. The AO layer should be on top of all other layers. Set Blending Mode to multiply and choose an opacity of 50%. You can also duplicate the layer, blur it and use an opacity of 30% - this makes the walls appear darker and more dirty.



Fig 17

17. Now copy and paste the Volumetric Lights as new layer. It should be on top of all the other layers; Blending Mode should be set to Screen for this one.



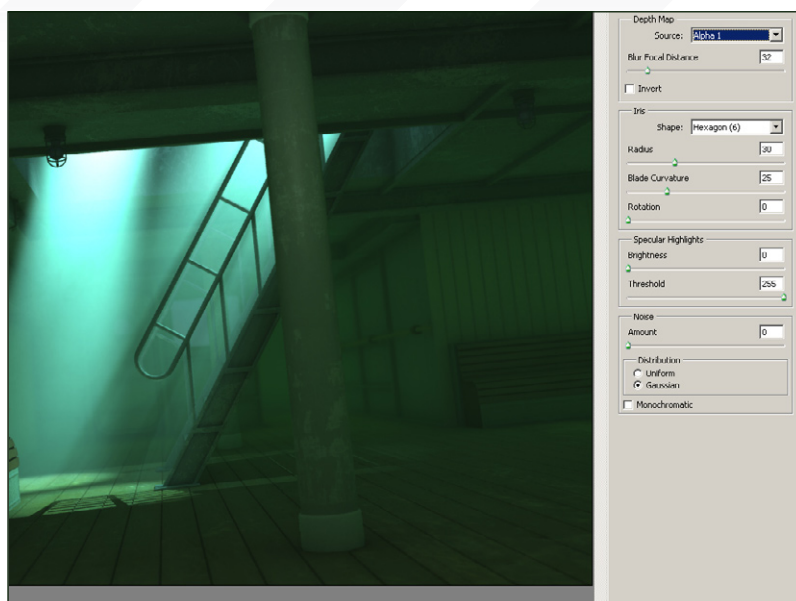
Fig 18

18. Now select the Depth layer, which can be found at the bottom of the layer list and copy it. Change to Channels, and paste it as new Alpha.

19. We change back to the RGB channel.

Before you merge all layers make sure to check out all the layers you have. You can fine tune each layer separately to get the look you want for your image. Just to keep it simple I assume we have already done that. On our merged layer, choose Filter – Blur – Lens Blur. As Depth Map we select the alpha we just created. To choose the Blur Focal Distance, we simply click into the preview image. The spot we click will be in focus – the ladder would be a good choice for this. We click ok and have our post process Depth of Field (Fig 19).

Fig 19



20. Now there are a few more things you can do to mess up your image. I for example added a gentle blur effect. Then I created several noise layers with a combination of Filter – Noise – Add Noise / Dust & Scratches. Finally I adjusted brightness & contrast. And here you see the result. I encourage you to play around to find your own look at this point. Of course you could still add bubbles, paint in fish or even add some underwater plants. As far as this tutorial is concerned, I call this image complete now.

Fig 20



Hope you enjoyed this last instalment as well as the whole series of Environment Tutorials. If you have suggestions or any question feel free to contact me via my website (Fig 20).

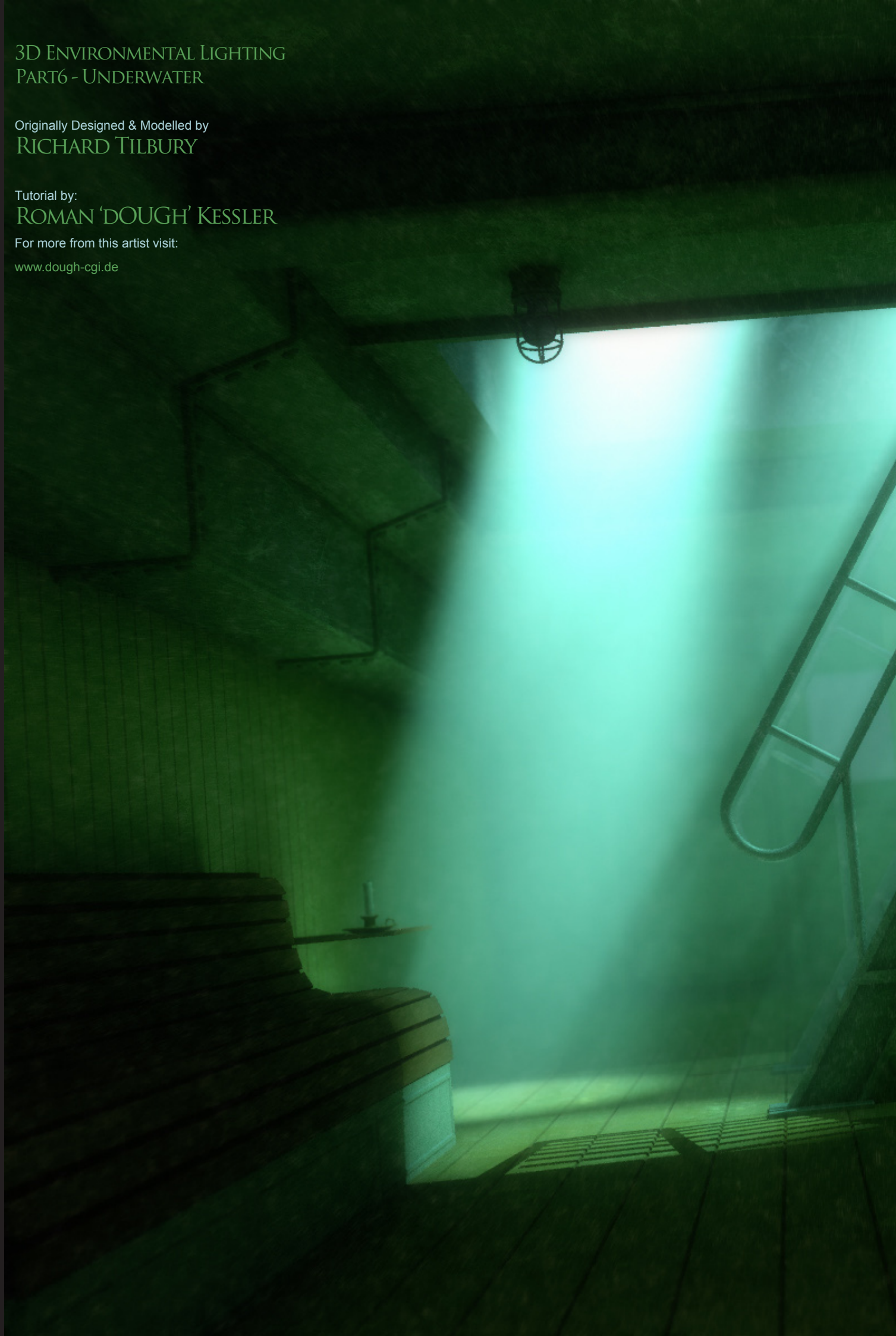
3D ENVIRONMENTAL LIGHTING PART6 - UNDERWATER

Originally Designed & Modelled by
RICHARD TILBURY

Tutorial by:
ROMAN 'DOUGH' KESSLER

For more from this artist visit:

www.dough-cgi.de







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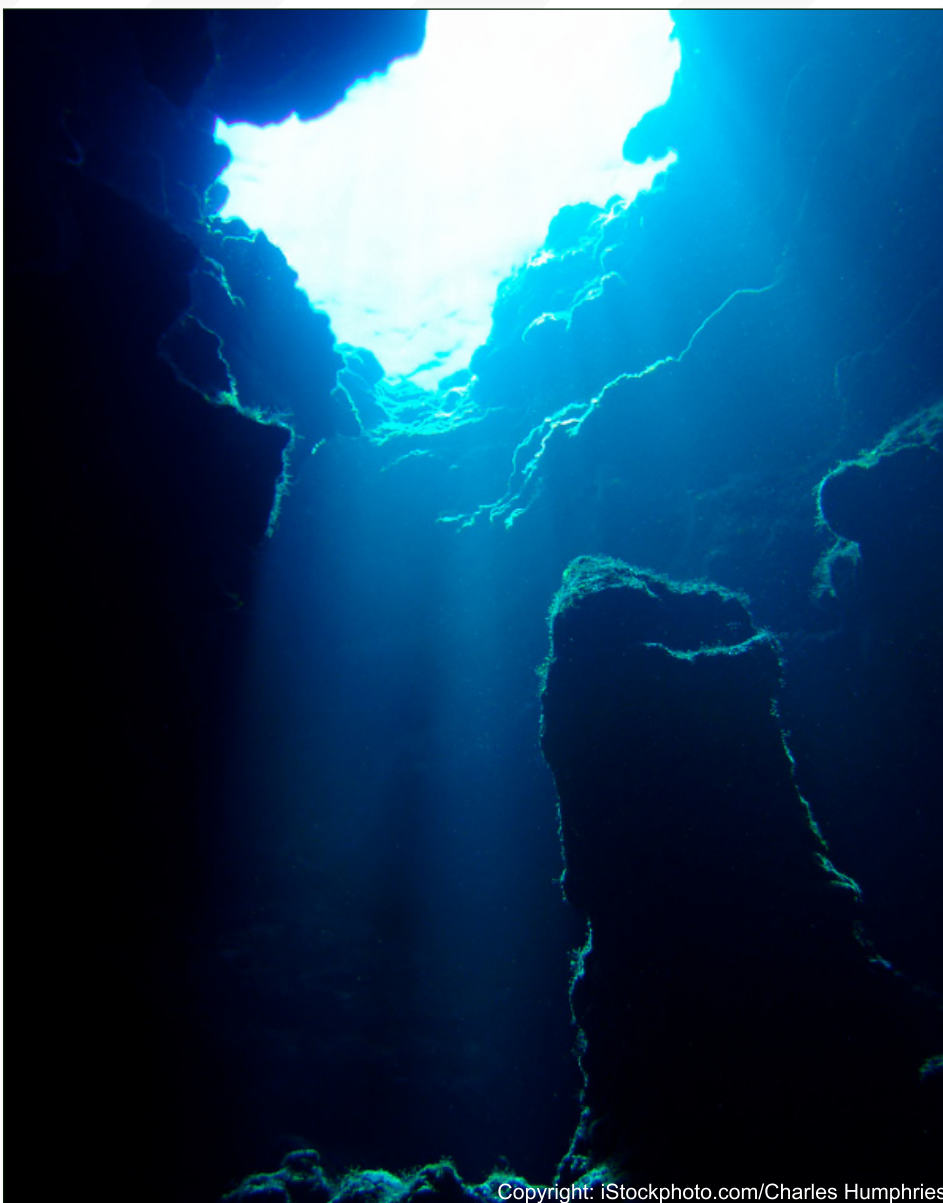
ENJOY ...

3D ENVIRONMENT LIGHTING PART 6 – UNDERWATER

Hello and welcome to the sixth and last part of our environment lighting tutorial series! In the preceeding parts we discovered the world of natural environmental lighting, artificial kinds of lighting, and a combination of the two. In our last feature we will be discussing a rather special case: that of an underwater scenario. This implies some more or less 'unusual' pre-requisite. More precisely, we will be in need of a truly visible 'medium', let's call it volume or ether. Most often people tend to fake such volume by simply using so called 'volume shadows' on their 3d lights, i.e. lights casting a visible 'light ray' into an apparent (though not existant) volume. This is not the real deal, however it is a favored method of both professionals (because it renders fast, which is essential specially for animations) and beginners (because its rather easy to set up and.. well I dont know. But its like the No.1 thing people wish to do when getting their hands on a 3d program). Anyhow, we will be going the way of the cowboy, or cowgal, and do it the tough style. Since this is all about rendering stills, we can afford to have this extra nuance of 'bought' prettiness.

Well. So we're back aboard.. though this might be a rather inappropriate description - we are sunk! The ship's body is below the waterline and filled with seawater. To believably illustrate this situation shall be the challenge of our tutorial. We will also be creating an eerie, or unfamiliar, uncommon lighting to support the feeling of being in a different world.

Before we start to do anything we need to have a few thoughts on this different world, because this time we actually have a whole different (or lets say: a more exaggerated) situation than usual. Mainly there are two things we need to consider: First WHAT makes underwater look underwater, and second HOW can we achieve/ simulate it. This might sound trivial, and in fact



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the circumstances are so trivial indeed, that most people seem to forget about them.

1. Lets begin by comparing our usual situation (land / more or less dry air) with our new situation (under the sea). In our habitual environment, like our office, the living room, or wherever inside a building, we usually do not have much of a visible 'volume' - except if we romp around and raise some dust. When this dust gets into the air, it naturally, like any matter, reflects light. Thus it gets 'visible'. The more dust we raise into the air, the 'thicker' the apparent volume gets, and the light rays seem to become actually visible - although all we see is the dust reflecting them. There is a nice (albeit philosophical) quote of Andre Gide that aptly says: "Without the dust, in which it flashes up, the sunray would not be visible".

Now there are more 'things' than plain dust in the air we breath, in fact there are tons of gases and particles which all make up what is commonly called the 'aerosol'. This rather invisible mixture of microscopic solid particles and liquid droplets have the same scattering impact on incident light as the regular (substantially larger) airborne dust.

This has an interesting effect: when light gets scattered (i.e. forced to diffusely deviate it's naturally straight trajectory) by a surface much smaller than the wavelength of it (like the aerosol ingredients), the so called 'Rayleigh scattering' occurs. Named after the physicist Lord Rayleigh, this general approximation rule says that the scattering 'probability' of a light ray is dependant on its wavelength - whereas the smaller wavelengths (blueish, ultra violet domain) have a higher chance of getting scattered than the larger wavelengths (reddish, infrared domain) (Fig01). Have you ever asked yourself why the sky is blue? THIS is the answer. The rather neutral, virgin and 'white' sunlight enters the earth's atmosphere, and the distinct portions of it get scattered by the aerosol - since the blue part of the light has a largely higher probability to get scattered, we seem to

be surrounded by a diffuse blue environment. As opposed to a sunset or dawn, where mostly unscattered light from the direction of the sun reaches the observer - and appears red, due to the lower wavelength.

Fair enough. Much pondering about the air, but what about our concrete underwater situation? Well, its basically the same story! The ocean IS blue. Not only because it reflects the sky, but also because of the Rayleigh rules explained above. This scattering rules basically apply to anything at anytime. In cgi we only neglect it, or often we fake it based on observational facts. And after all, computing true wavelength based Rayleigh scattering is a seriously complex task, and its questionable if the effort can be justified, since it's mostly rather marginal effect would 'steal' the rendering time we could spend on other things that make our image pretty.

Have you ever asked yourself for example: why do Maxwell Renders of outdoor images look faint, whilst the indoors look pimp? Because they neglect this light scattering (at least to this point in time)! The scattering effect is not as apparent in the indoor/interior renderings, but has a large impact on the 'naturalness' of outdoor, larger scale situations. The Rayleigh rule is omnipresent, unless you're in a complete vacuum.

And it is even more evident in 'thicker' mediums, or volumes, like the ocean water, which is full of more or less tiny particles. The only difference here is that the light gets scattered and absorbed earlier, which is often referred to as a higher 'extinction'. A light ray entering such volume has a certain probability to either get scattered forwards (along it's original trajectory), backwards (the direction it came from), something inbetween, or to get completely absorbed by some particle. Every volume has it's own characteristics at how much of each of the former criteria is being applied, not to forget that the wavelength of the light ray looms largely over this...



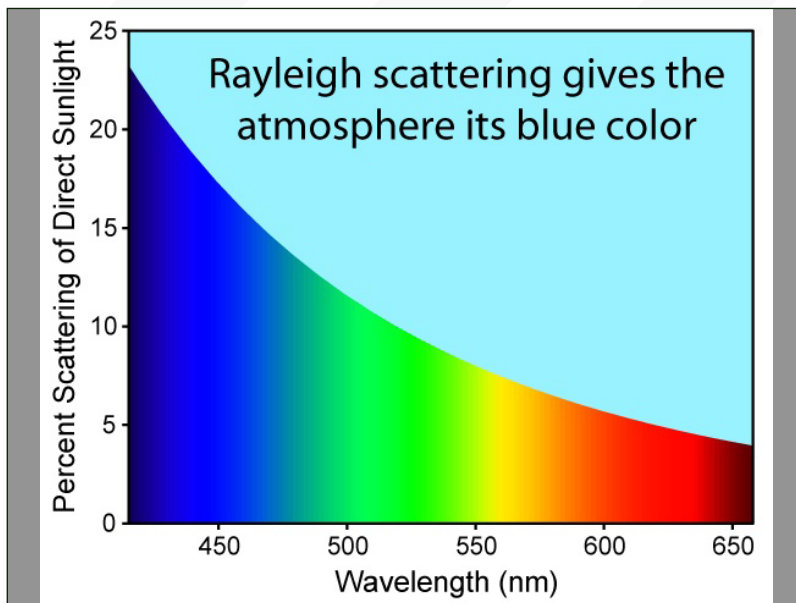


Fig 01

This behavior can be modelled, or simulated by a so called ray marching shader. We are not going to obey the wavelength dependant rules strictly (it'll be more of a guesstimation), but lets finally get our hands on our actual scenery.

As a reference I like to use <http://www.underwatersculpture.com/> by Jason Taylor, which has various and no less beautiful photographs on the day-to-day-things-underwater subject.

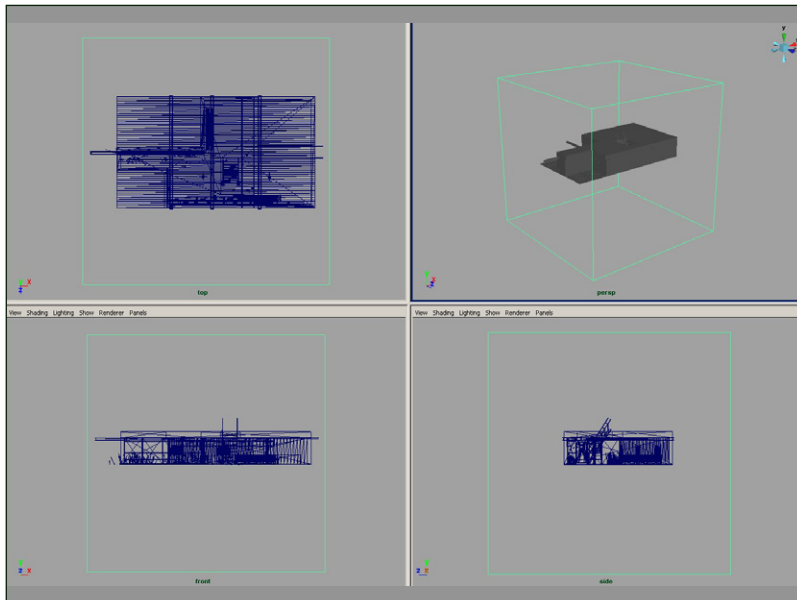


Fig 02

2. To build up our medium, I decided to simply create a large surrounding cube (Fig02) as a 'container' of our volume. This is the simplest and mostly fail-safe way to set up this kind of stuff. We could alternatively build our volume through our camera's volume shader slot, which would basically have the same effect unless a ray would hit 'nothing', where this second approach would simply return the un-approximated environment color. This alternative method could take longer to render, because the ray marcher could possibly take some more and unnecessary steps further into the depth (not in our case however).

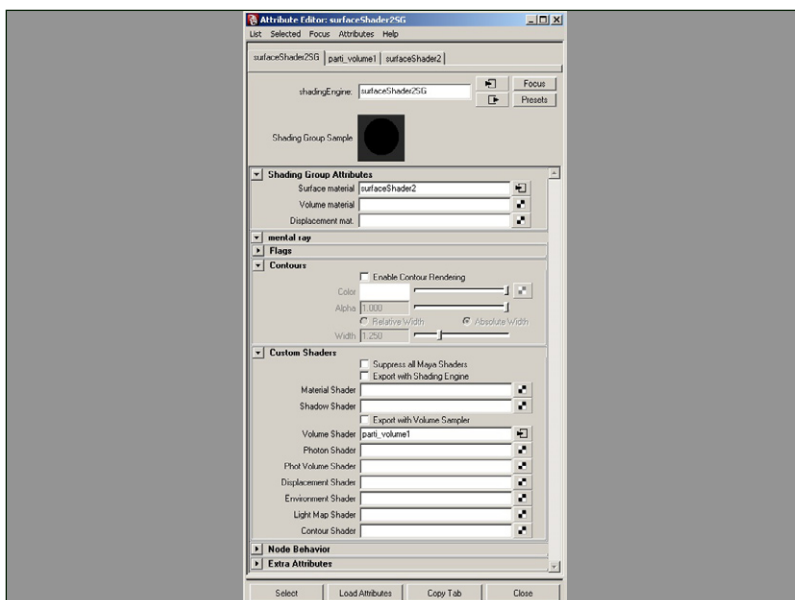


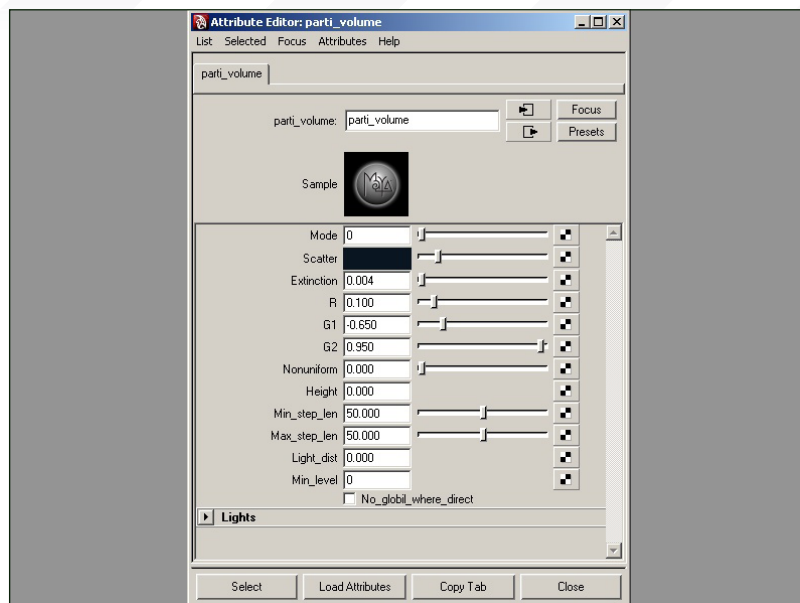
Fig 03

The ray marching utility we will be using is the rather ancient, though still nicely working mental ray 'parti_volume' shader, which can be found under the 'mental ray Volumetric Materials' tab in the hypershade. This is not to be confused with the parti_volume_photon, which is used for volume photon tracing, but we will not use photons to obtain indirect illumination in our tutorial anyway. Our method will be a bit less accurate but still nice and fast enough to create our desired look and feel.

3. Lets have a look at the volume shader. Foremost, we assign a new 'black' surface shader to our cube container, and connect the parti_volume to its shading group's 'Volume Shader' slot (Fig03). Thats pretty much it for the

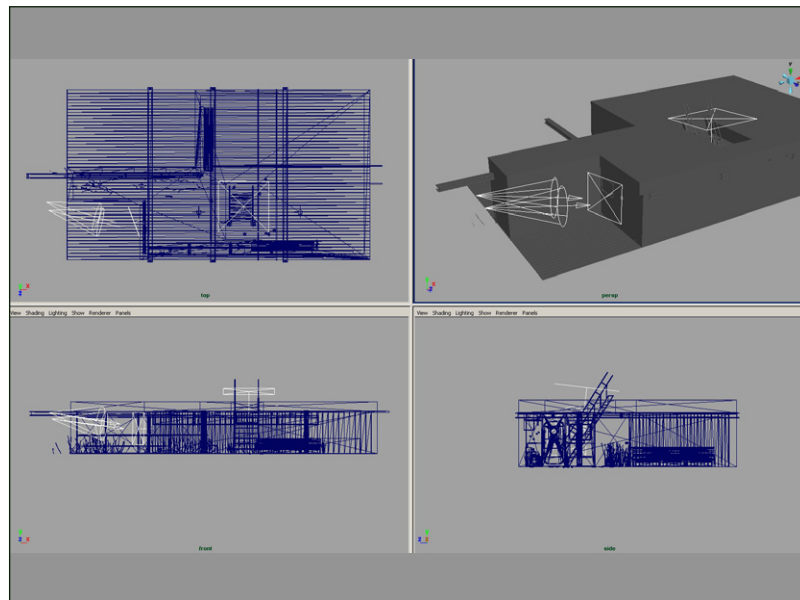
set-up part, and we can have a closer look at the parti_volume's diverse attributes.

Fig 04



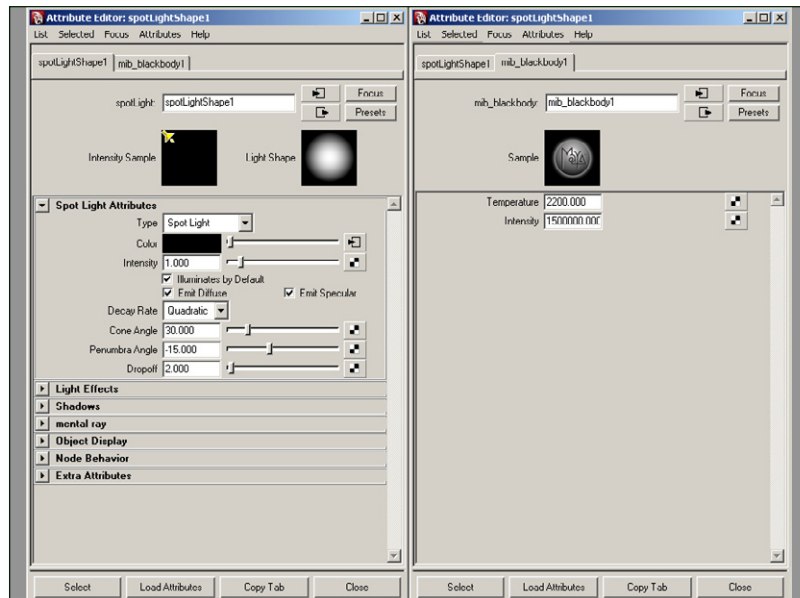
4. Most important for our needs right now is the scattering part (Scatter, Extinction), the so called scatter lobes (R, G1, G2, more on this later), and the ray marching quality settings (Min_-, Max_step_len). The other attributes, which we will neglect however, are for filling the volume only partially (Mode - 1 means 'do it' - and Height), to add a noise, or rather density variation (Nonuniform, 0.0 means 'no noise') and stuff we really don't need (Light_dist, Min_level, No_global_where_direct). As you can see, there's lots of techy stuff, but we'll concentrate on the essential things. (Fig04).

Fig 05



First the scattering factors, Scatter and Extinction. Scatter basically controls the color of the medium and is closely related to the Extinction, which controls the density of the medium. Both go hand in hand, and the hassle about this is that to work with half-way rational values we need to have a quite dark Scatter color and a quite low Extinction factor - if any of the two goes into higher extremes we'll typically end up with undesired results. So I decided for a value of RGB 0.035, 0.082, 0.133 for the Scatter color, which is a natural blueish tint. Since we don't do wavelength dependant calculations I decided for this predominant color that mimics and supports the Rayleigh rules explained above. For the Extinction I used a low appearing value of 0.004, but keep in mind that this is all correlative with the Scatter color, and very sensitive. So this value will give us an extinction that swallows almost all of the light in the rear corners, and that's way enough.

Fig 06



Now about the scattering lobe. That's a bit more difficult at first glance. Basically, a negative value for G (either G1 or G2) means a backscattering lobe (back into the direction the light ray came from) and a positive value means a forward scattering lobe (forward along the original trajectory of the light ray) - and R simply means the mixture between G1 and G2. So you typically chose one backward scattering lobe

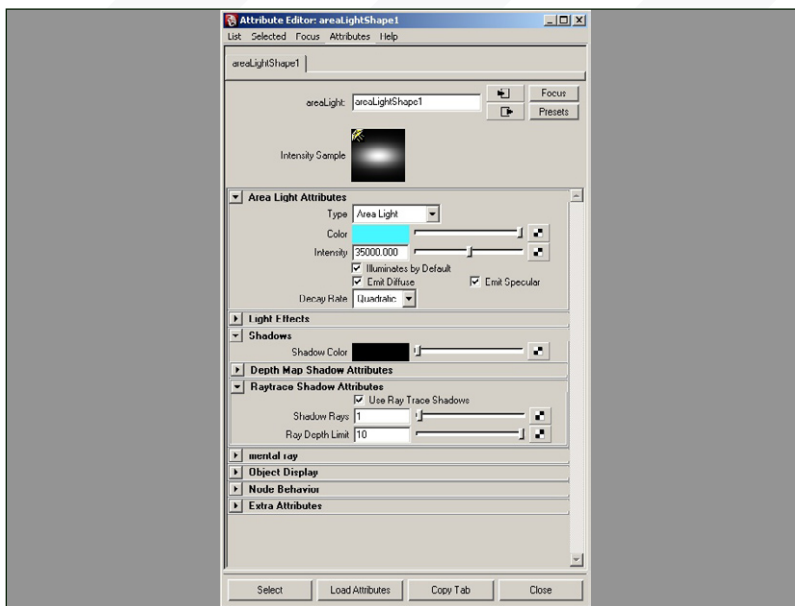


Fig 07

(i.e. a negative value for G1) and one forward scattering lobe (i.e. a positive value for G2), and weighten both with the R attribute. Whereas 1.0 for R means 'use only G1' and 0.0 means 'use only G2' and 0.5 would weight both equally... I know - there must have been some really funny guy at mental images who wrote this shader, and I'm pretty sure he's still laughing up his sleeve.

Anyhow. I chose a rather forward scattering volume, but I encourage you to experiment with the values. The forwardish scattering creates these nice glow-like appearing light sources when the light points towards the camera (its vice versa if the light is e.g. behind the camera of course). So I used R 0.1, G1 -0.65, G2 0.95 for my final image.

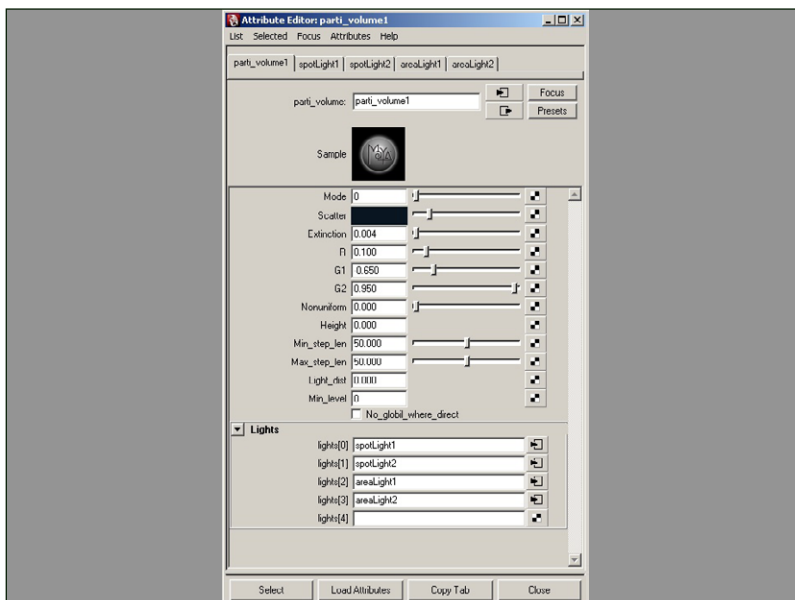


Fig 08

Last but not least I trimmed the Min_ - and Max_step_len to 50.0 each. This attribute decides at which distances (step lengths) to stop for looking up a volume sample - hence the rays 'march' through the medium, and the lower the step lengths the more samples will be taken, the better (less noisier) the image quality gets and the longer it'll take to render. If you think it takes too long to render, boost this value up. On the other hand, if you think you get too much noise and artifacts in your image, reduce it. Generally however the manual proposes to use a value of about 10 percent of the Max_step_len for the Min_step_len, so you might want to try this as well (5.0min/50.0max). It is worth mentioning that the step length values are in actual scene units, so in our case it looks up a volume sample every 50 centimeters.

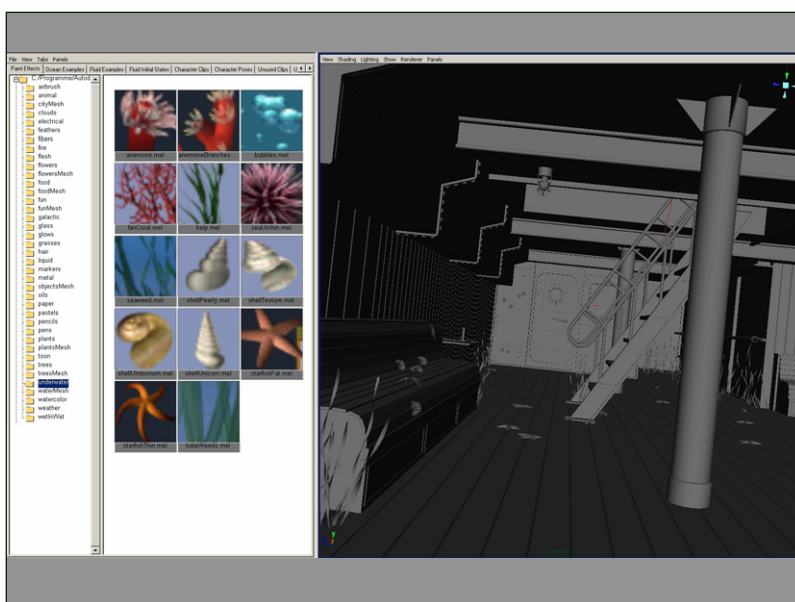


Fig 09

5. Ok, we have our medium set up and running (almost), now lets create some lights to make it shine. Since our volume shader relies more on direct rather than indirect light we cannot rely much on the later final gathering for the 'diffuse' incoming illumination. That's why I created two area lights for this job, one above the hatch, and one right behind the rear windows. For the main light source however I used two spot lights shining in from outside (Fig05).

6. For these main lights I used a mib_blackbody helper utility at 2200 Kelvin to obtain a rather warm and diver-flash-light-like color (Fig06) (the method of using a blackbody temperature as color source has been explained more extensively in the two preceeding tutorials!). Though one could also imagine that its the sun shining in from windows, you must decide this and play around with it (in the words of Bob Ross: there's no failures, only happy accidents!).

7. The two area lights need a mixture of natural blue (due to Lord Rayleigh's stuff) and green (due to many small greenish micro organisms floating in the sea, like plankton or algae). This mixture is commonly referred to as cyan, turquoise, mint or cobalt, depending on which color is weighted, or most felicitous: aquamarine (Fig07).

8. So far so good? Uhm.. there's one last very important thing we need to consider. Remember the funny shader programmer? He decided to omit every light that is NOT on his list. That's a strange attitude, but not stranger than the other stuff in the parti_volume, no ? So we need to link every light on the light list (Fig08). You can either put in the (case sensitive!) name of the light, or mmb drag and drop the light transform from the outliner onto a spare field (you need to re-select the parti_volume each time you connect one light, so the mechanism can add another open slot).

9. Now that we have this part running, lets think about adding a few details that would add more to the underwater impression. In Maya we fortunately have the Paint Effects system, which is easy to use and even has some built-in 'underwater' brushes (Fig09). I used some sea urchins here and there, a hint of shells, and a few scattered starfish. I also added a little of the seaweed to some corners.

10. To be able to render the Paint Effects with mental ray we need to convert them to regular polygons (Fig10). I also converted their Maya shaders to mental ray mia_materials, which

Fig 10

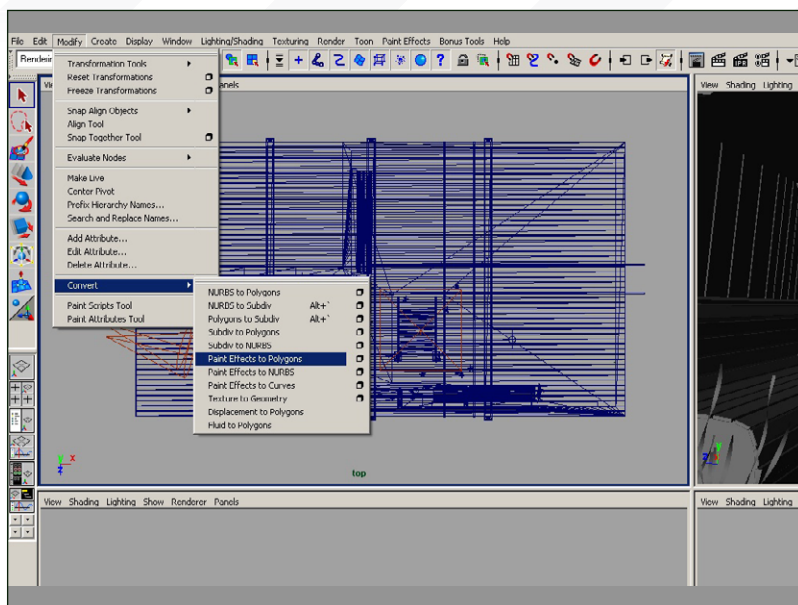


Fig 11

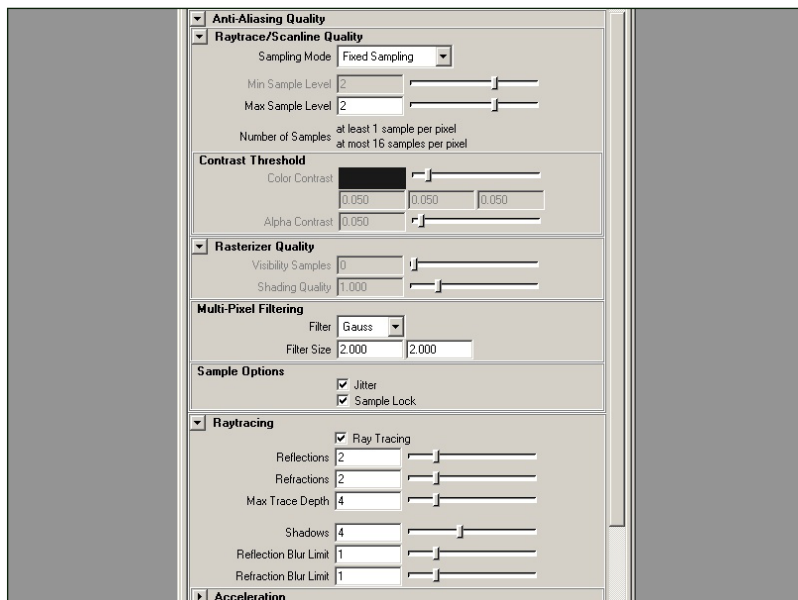
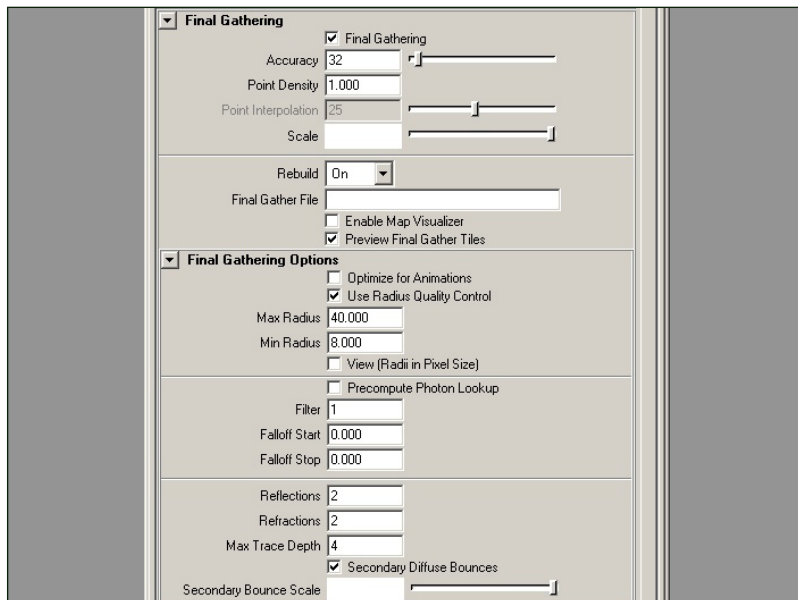


Fig 12



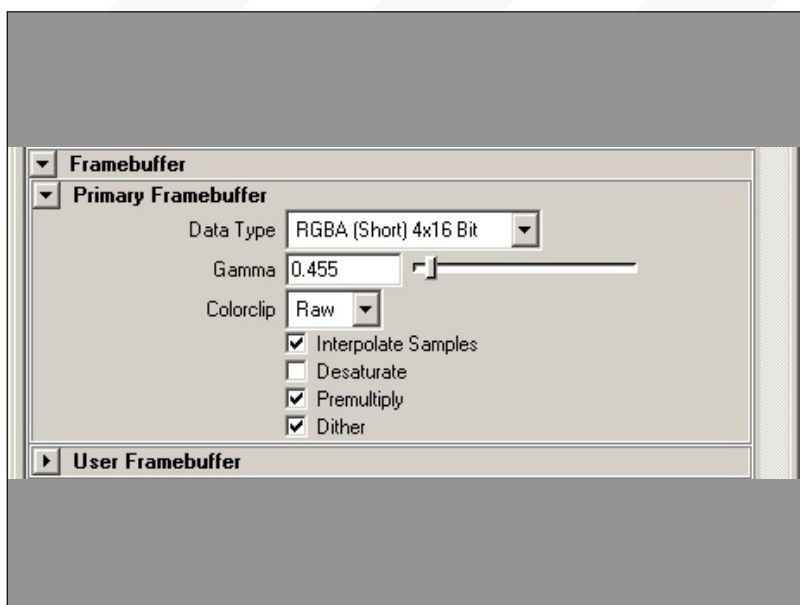


Fig 13

is always a good idea to obtain a consistent shading behavior across the scene, since in our case everything else is built with them as well. This needs to be done manually however.

11. That's it; we're finally ready to render. I used a fixed sample rate of 2/2 this time (Fig11). This is quite a brute-force way, and you might consider using an adaptive sampling of 0/2, but be advised to tune up the sampling of the area lights along with it, since they are all left at 1/1 right now. Also you should consider lowering the parti_volume step lengths if you encounter artifacts with the adaptive sampling. It is also worth mentioning that to actually 'cast' a shadow into the volume, we need to have a shadow (and general max-) ray trace depth of at least 4.

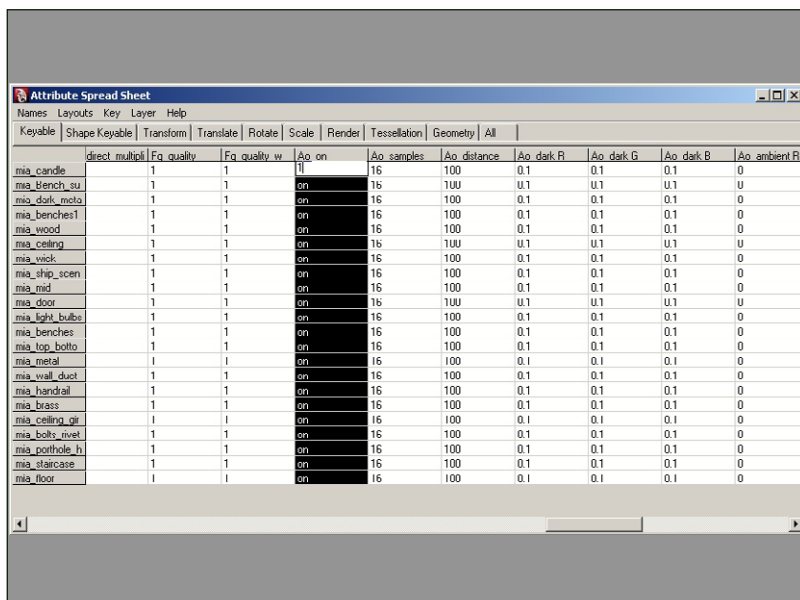


Fig 14

12. For the indirect illumination I chose a rather low-quality appearing final gathering with diffuse bounces (Fig12). This time, due to the volume stuff, the final gathering will not add all too much to the image, but it still has a nice contribution to the general look of our piece.

Before we push the render button we need to chant the gamma mantra though, as always. Since we want our image to look nice, natural and appealing, instead of dark, smudgy and cg-ish, we need to pull it from its default color space, i.e. mathematically linear, into the one we are used to seeing, i.e. gamma corrected sRGB. There's a deeper explanation on this matter in the very first of the tutorials, the sunny afternoon. To recall the essential basics however, let's repeat why we need to care about the gamma issue BEFORE we render out our image. As mentioned, the (any) renderer does its internal calculations in a mathematically linear manner, which generally is a good thing. We could pick this truly linear result and take it into our post application and gamma correct it there (because gamma correction / putting things into the sRGB color space is desirable in almost any case - probably almost everything you see, i.e. photographs, pictures are in this sense, already gamma corrected. When using regular image files, which usually



Fig 15

have the sRGB/gamma correction 'baked' into them a priori, we need to remove this gamma correction, before we RE-apply it on the whole image. Makes sense, no ? I know its confusing, but unless you dont want to have double-gamma-washed-out-looking textures we need to obey this little rule. Applying the right gamma on the whole image afterwards isnt enough, if we want the textures to look as they should (i.e. as we are used to seeing them, in their sRGB color space). Now, many people dont care about this whole issue and thus render in the plain mathematically linear space. They wonder why their images look strange and unnatural, and have this unusual dark and smudgy look and blown out highlights and overbright areas everywhere. Realtime 3d has yet to 'learn' that mathematically linear rendering is not what the eye is used to seeing in nature (the human brain reaches a 'gamma corrected', or rather logarithmically corrected image too, if you will! Although human perception is far more complex of course).

13. So we want to have it gamma corrected/ sRGB. Our renderer mental ray has a built-in function to automatically 'remove' the gamma from the textures before rendering, and apply the inverse of this gamma on the rendered pixel/image. To do so, we go to the Primary Framebuffer tab in the render globals and put the appropriate gamma value, which is $1/2.2$ or 0.455 , into the Gamma field (Fig13).

14. As a last enhancement lets turn on the 'detail ambient occlusion' mode of our mia_materials. It should all be set up already by default, we simply need to switch it on by selecting the mia_materials and raising the Ao_on value from 0 (off) to 1 (on). We can do this easily for all selected shaders at once by using the attribute spread sheet (Fig14), from the Window> General Editors> Attribute Spread Sheet menu.

15. We should come up with a render similar to (Fig15). I rendered to a regular 16bit image format, and took it into photoshop for some

Fig 16



contrast and color adjustments. That's the most enjoyable part of it.

16. After playing around with the white balance, crushing the blacks, enhancing certain color elements (i.e. the blues and aquamarines), and after having fun with the 'liquify' function in Photoshop I came up with my final interpretation (Fig16). I also put a 'dust/grime' image on top of the image, to support the feeling of a thick medium. I hope you like it.

And I hope you enjoyed following our environment lighting tutorial series, as it is time to say good bye for the time being. I have had a great time solving all the problems concerning each of the tutorials, and most definitely learned a lot along the way, and hopefully you have too. If you have any questions, criticisms, comments or any other input on the tutorials, don't hesitate to contact me.

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low poly game character

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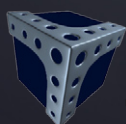
Introduction:

The original character of the Swordmaster was created by Seong-wha Jeong and we had 3DTotal's in-house 3d artist Richard Tilbury, re-create the character in 3dsmax as well as create the textures in Photoshop, in our new precise, step-by-step tutorial for highly polished, low polygon game character with detailed texturing for real-time rendering. We have also converted the tutorials into Cinema 4D, Maya, Lightwave and Softimage platforms. Even if you are not a user of one of them, the principles should be easily followed in nearly all other 3D applications.

The Swordmaster tutorials is spread over 8 Chapters which outline, in detail, the process for creating the Swordmaster below are the details.



- Chapter 1: Modelling the Head
- Chapter 2: Modelling the Torso
- Chapter 3: Modelling the Arms & Legs
- Chapter 4: Modelling the Clothing & Hair
- Chapter 5: Modelling the Armour
- Chapter 6: Mapping & Unwrapping
- Chapter 7: Texturing the Skin & Body
- Chapter 8: Texturing the Armour & Clothing



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3D environment lighting

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'3D Environment Lighting' is our new 6-month tutorial series. Over the course of the next six months, this series will be detailing techniques on lighting an environment under a number of different conditions.

Each month we will cover a step-by-step guide to setting up lights, aimed at portraying the scene in a specific manner. The various tutorials will be tailored to specific software packages and each will aim to show a comprehensive and effective way of lighting an interior of a ship that includes both natural and artificial light. These will include a sunny afternoon, sunset, moonlight, electric light, candle light, and finally a submerged submarine light. The schedule is as follows:

Issue 023 July 2007

NATURAL EXTERIOR LIGHTING
SUNNY AFTERNOON

Issue 024 August 2007

NATURAL EXTERIOR LIGHTING
TWILIGHT

Issue 025 September 2007

NATURAL EXTERIOR LIGHTING
MOONLIGHT

Issue 026 October 2007

ARTIFICIAL INTERIOR LIGHTING
ELECTRICAL

Issue 027 November 2007

ARTIFICIAL INTERIOR LIGHTING
CANDLELIGHT

Issue 028 December 2007

ARTIFICIAL EXTERIOR LIGHTING
UNDERWATER

ENJOY ...

3D ENVIRONMENT LIGHTING PART 6 – UNDERWATER

Welcome to the last part of the 3D Environment Tutorial series. This time we'll create an underwater scene for the Ship Cabin. Just imagine it sunk and laying on the ocean bed, with a big spot of light coming from outside. This is what we'll try to do using Softimage|XSI and mental ray renderer.

1. Open the 3DENV_Underwater_Start.scn scene file. (Fig01)

2. First of all, let's create a new spotlight, like the one shown in Fig02. What we want to do is concentrate the light coming from above on the area marked with the red circle.

3. Open the Spot's property page and copy the parameters from Fig03. Change its color to a medium blue, set its intensity to 2 and make it cast shadows. Also, pull the Umbra value all the way down to zero.

Fig 01

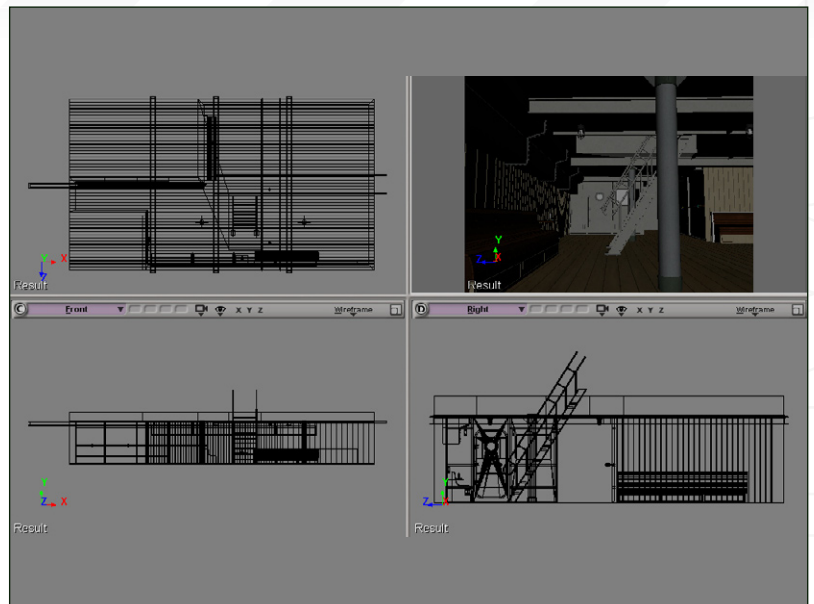


Fig 02

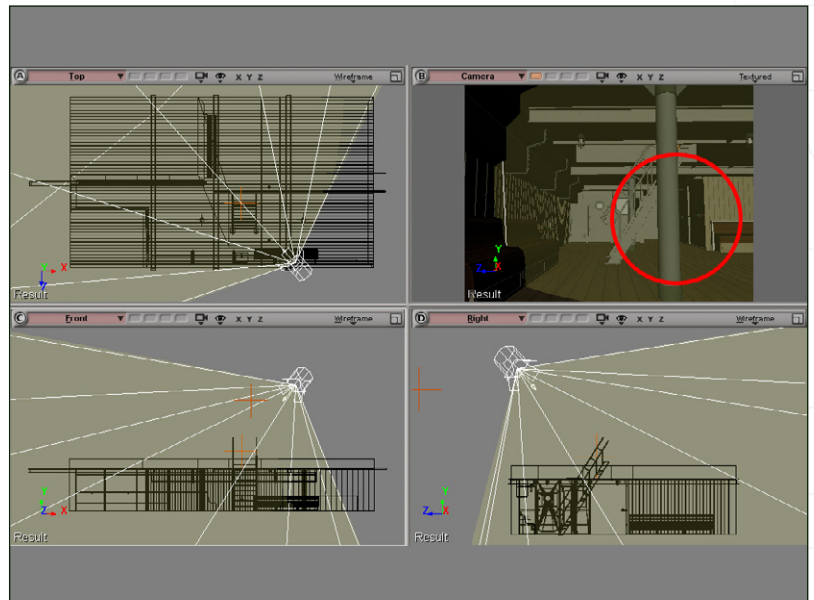
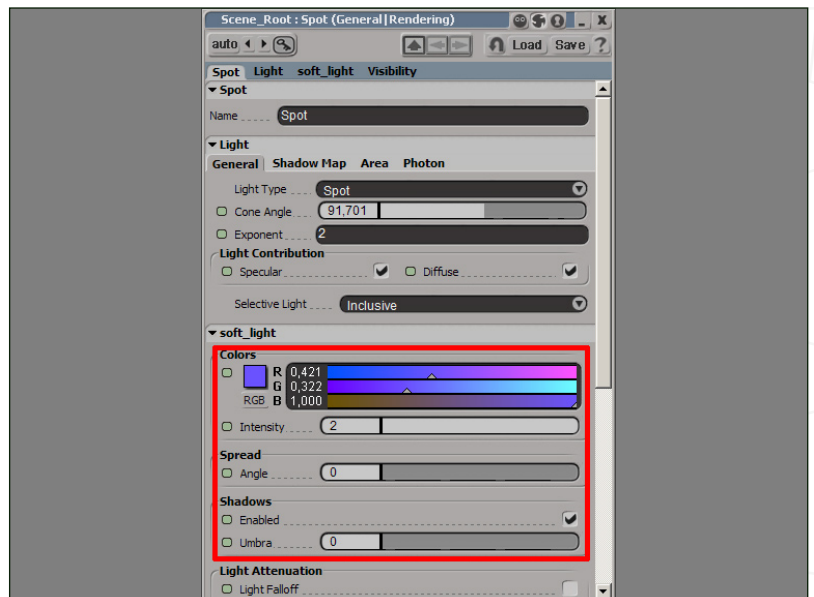


Fig 03



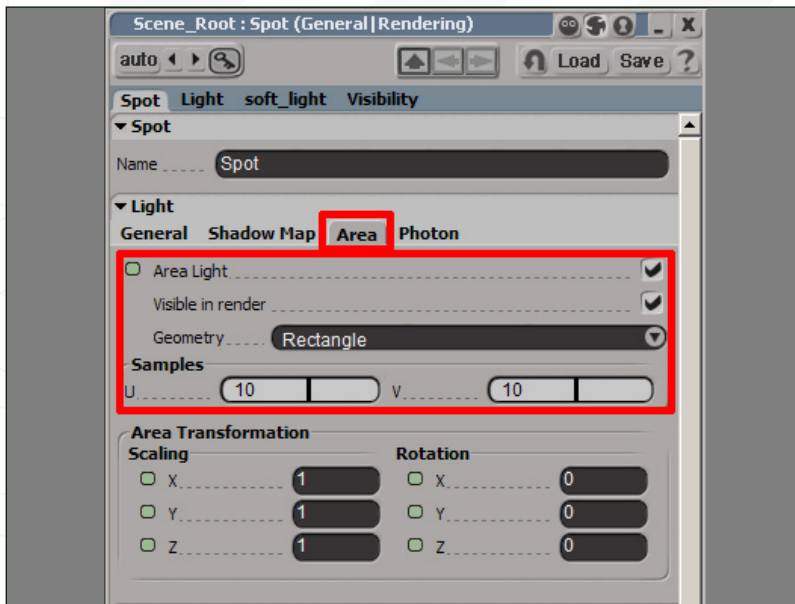


Fig 04

4. Switch to the Area tab and enable Area Light. Set the geometry type to Rectangle and increase the Samples values. (Fig04)

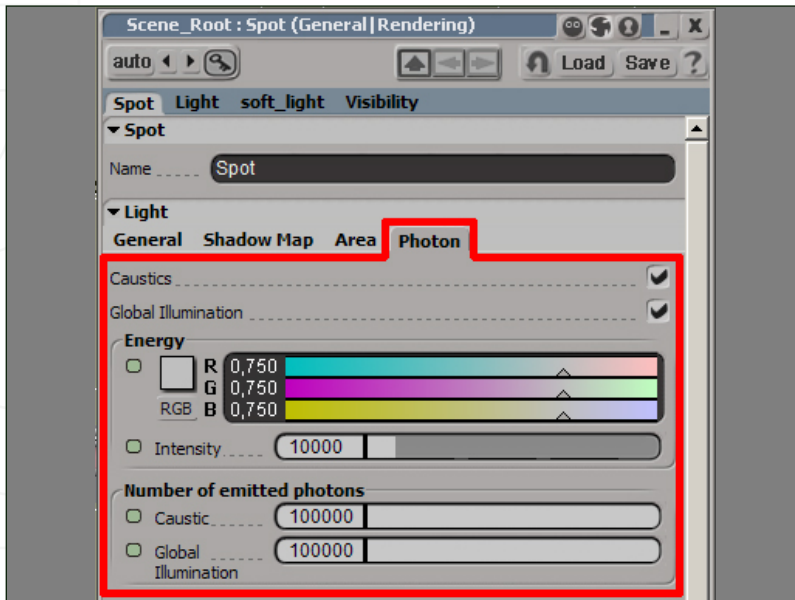


Fig 05

5. Switch to the Photon tab and enable both Global Illumination and Caustics. Change the number of emitted photons to 100000. (Fig05)

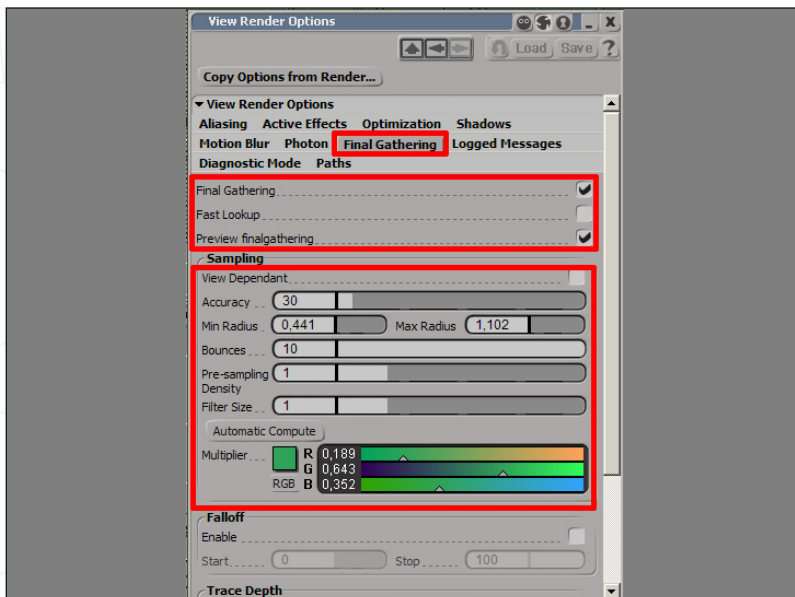
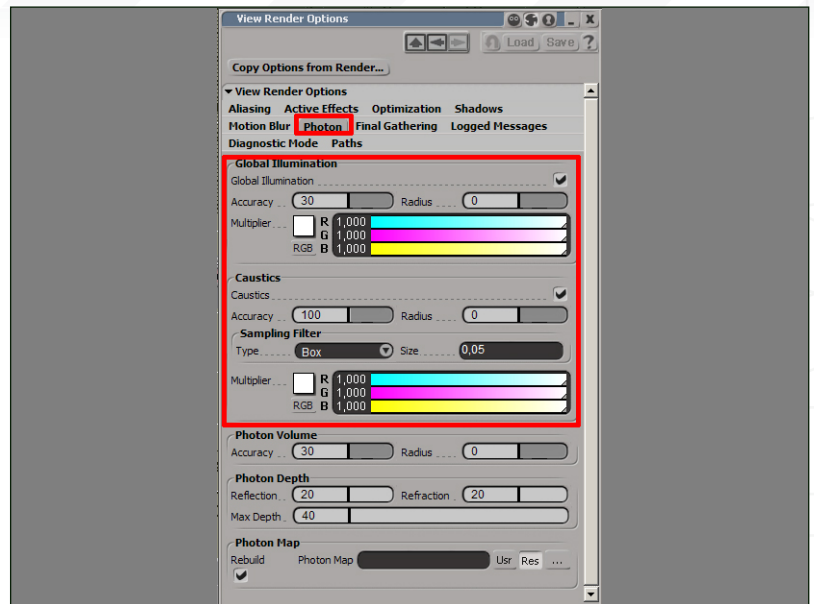


Fig 06

6. Open the Render Region property page and switch to the Final Gathering tab. Copy the parameters from Fig06. You can keep a low value for the Accuracy for now as we'll increase it later for the final rendering. (Fig046)

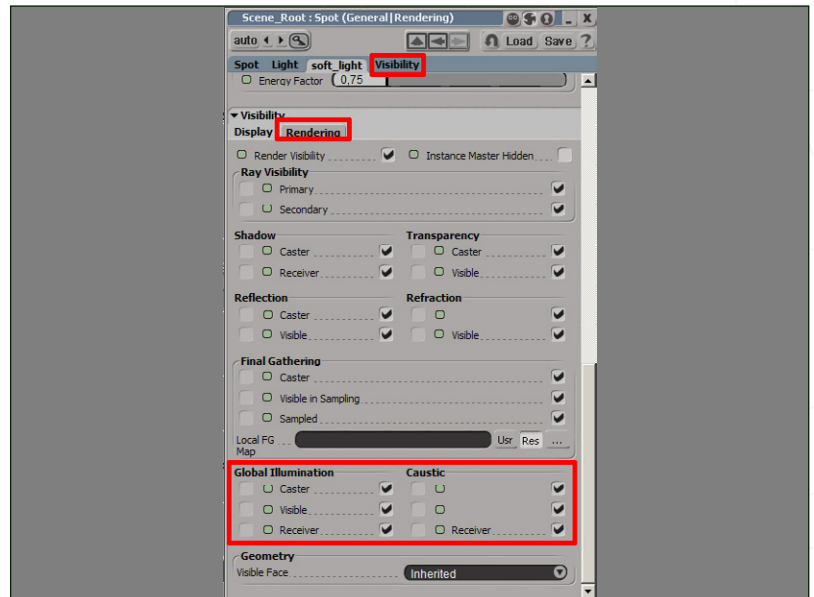
7. Move on to the Photon tab and enable both Global Illumination and Caustics. (Fig07)

Fig 07



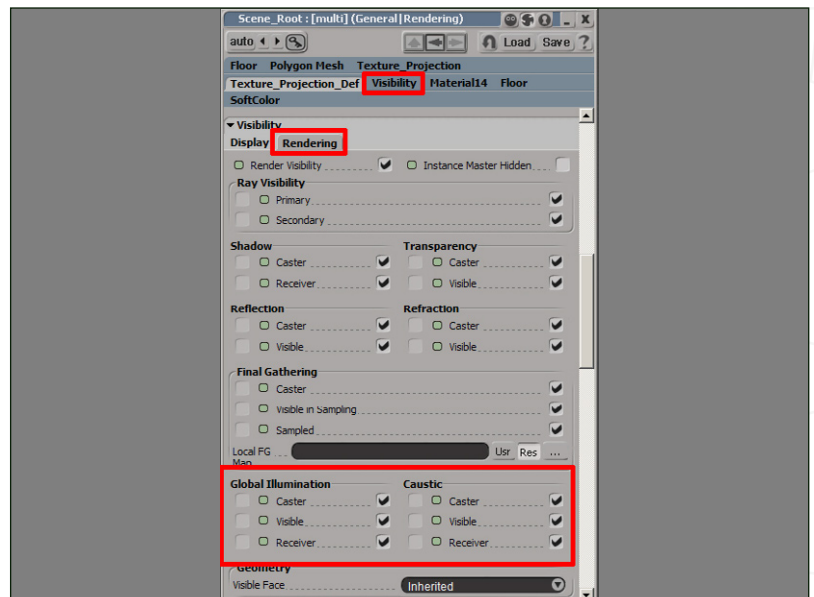
8. Let's go back to the Spot light's property page. Open the Visibility rollout, switch to the Rendering tab and make sure that the light is a caster of Global Illumination and Caustics, too. (Fig08)

Fig 08



9. Select the floor and walls object and make sure that both are receivers and casters. (Fig09)

Fig 09



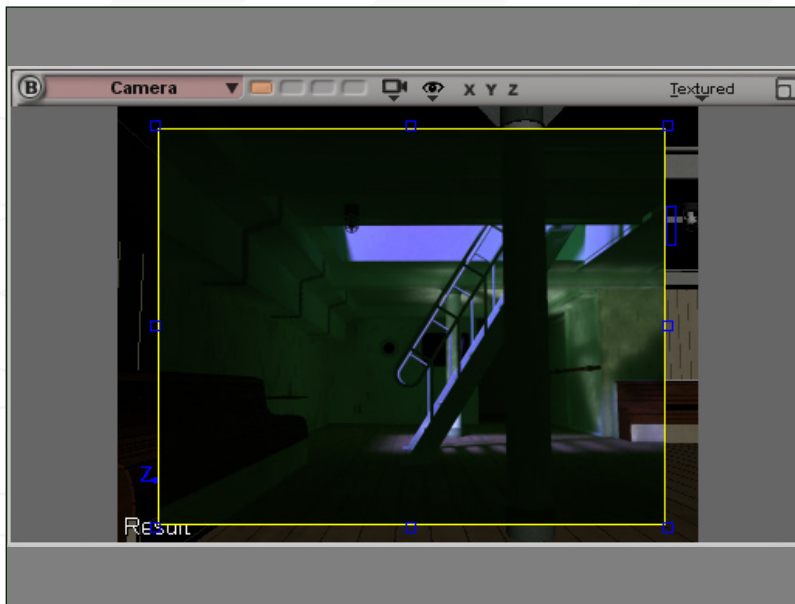


Fig 10

10. Now we can do a quick render region test to see what's happening in our scene. (Fig10)

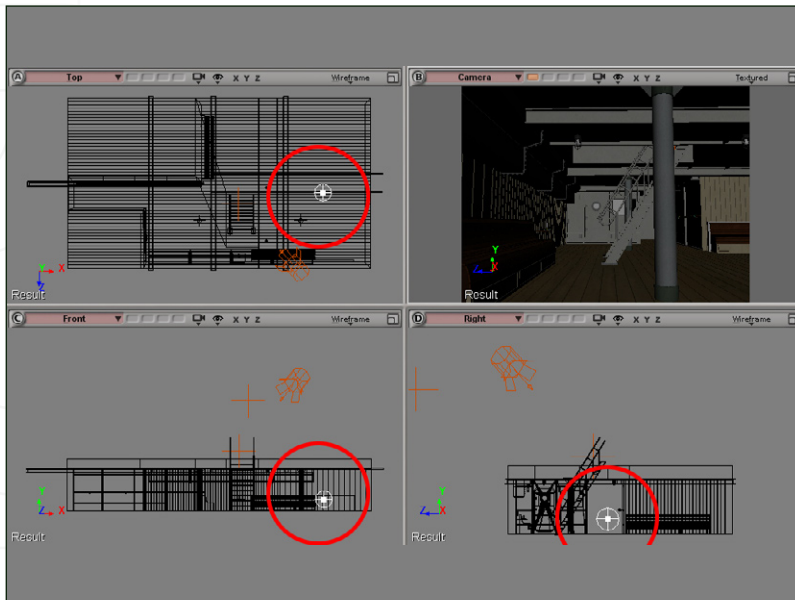


Fig 11

11. We need one more light for the darkest part of the scene (the one close to the camera). Create a new Point light and position as shown in Fig11.

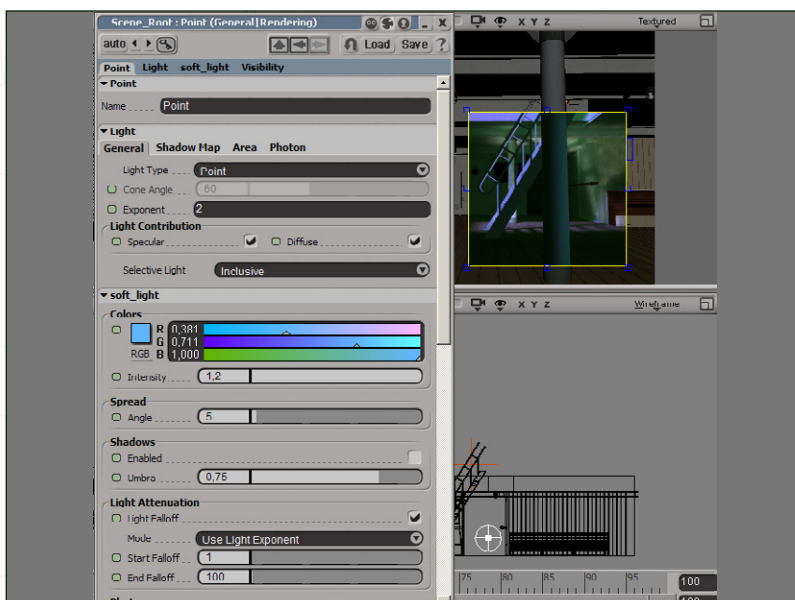
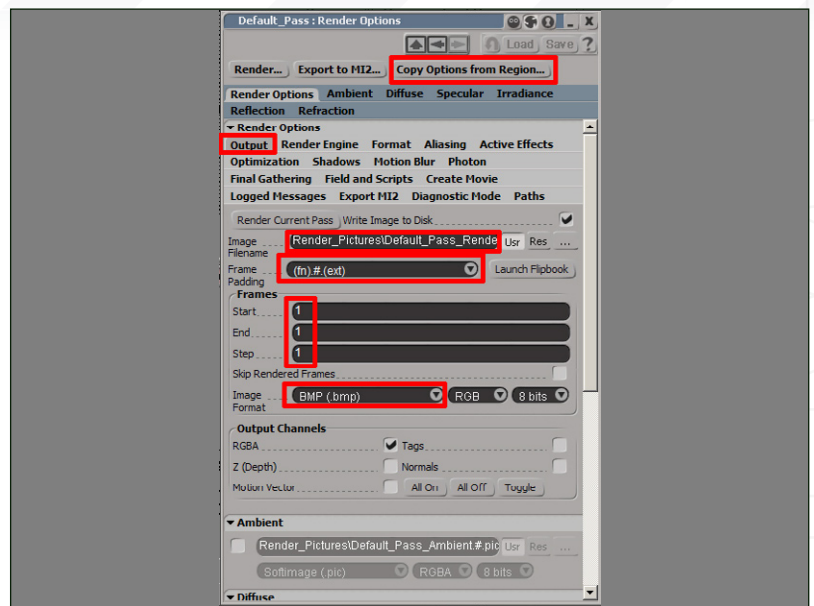


Fig 12

12. Open the Point light's property page and copy the parameters from Fig12. Render-region again.

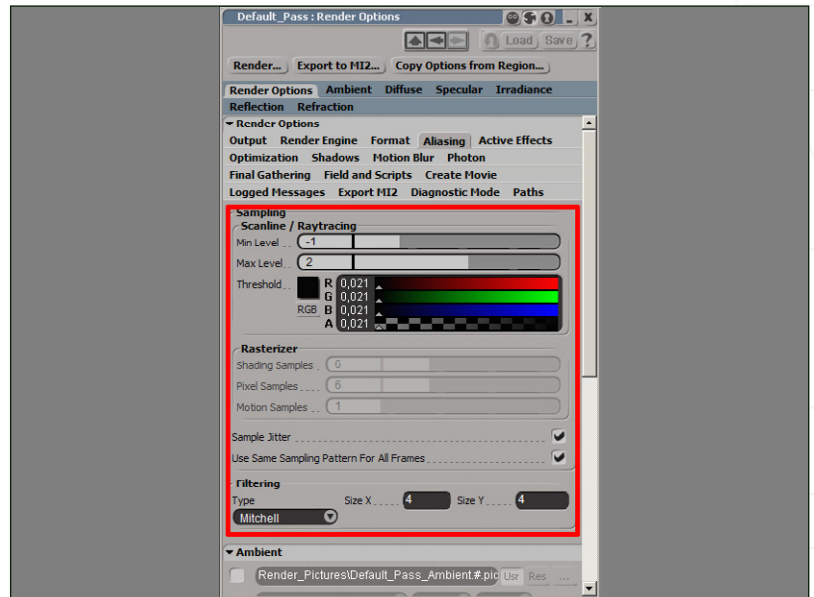
13. Now we can set the final rendering. Open the Render property page and copy the options from Region (use the opposite button). Set the type of output, the file name, the picture format and the number of frames you want to render (just one, in this case). (Fig13)

Fig 13



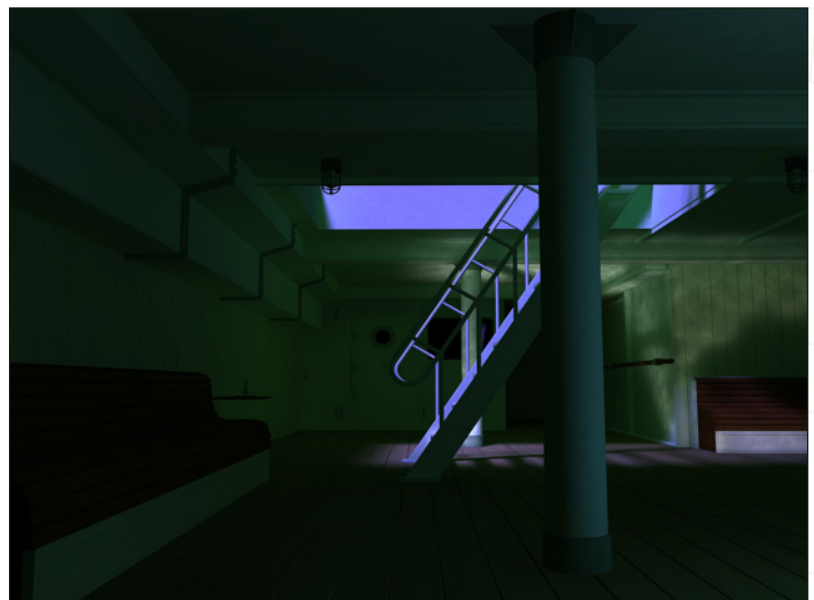
14. Switch to the Aliasing tab and copy the parameters from Fig14. These will make the aliasing quality better and sharper.

Fig 14



15. Hit the Render button and wait for the final rendering to be done. (Fig15)

Fig 15



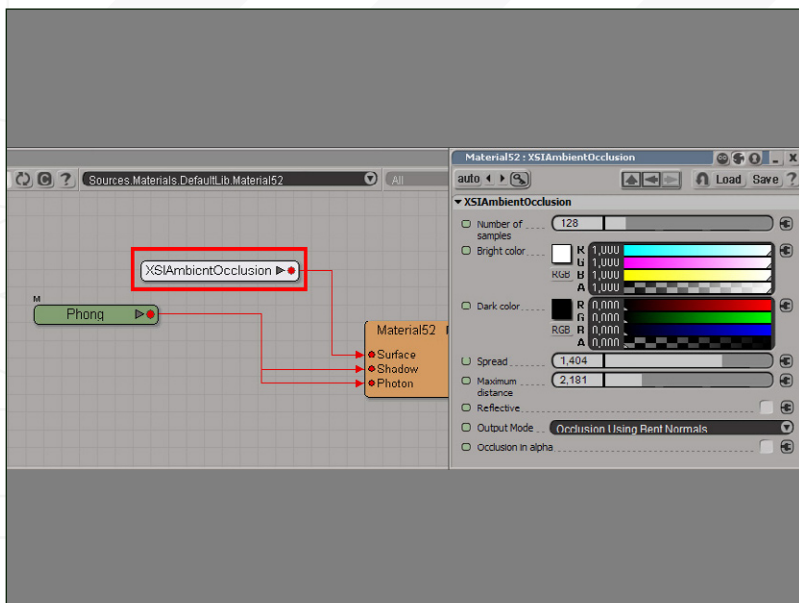


Fig 16

16. Now open the 3DENV_Underwater_AO.scn scene file. In Fig16 you can see the Ambient Occlusion shader used to obtain the AO Pass.

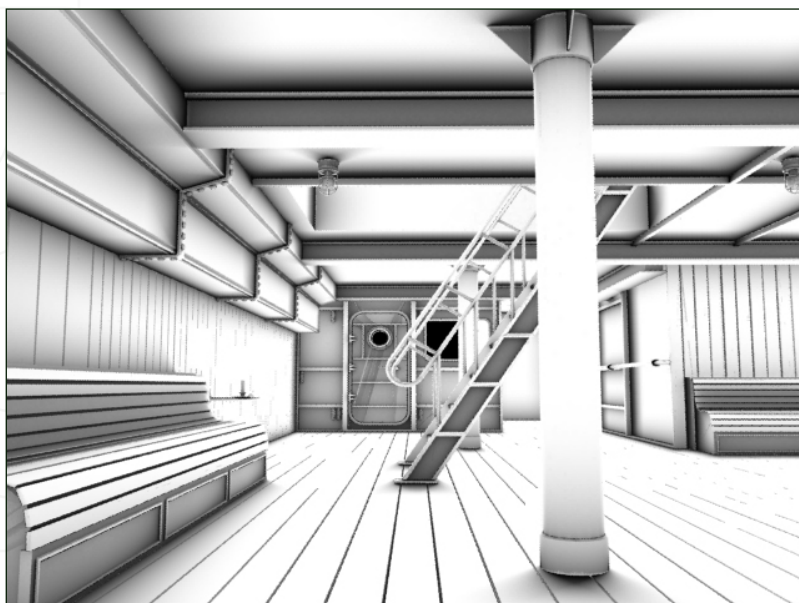


Fig 17

17. Render the AO Pass and save it as a picture. Make sure to use the same output settings as for the original rendering (same size, same aspect ratio, etc.) (Fig17)

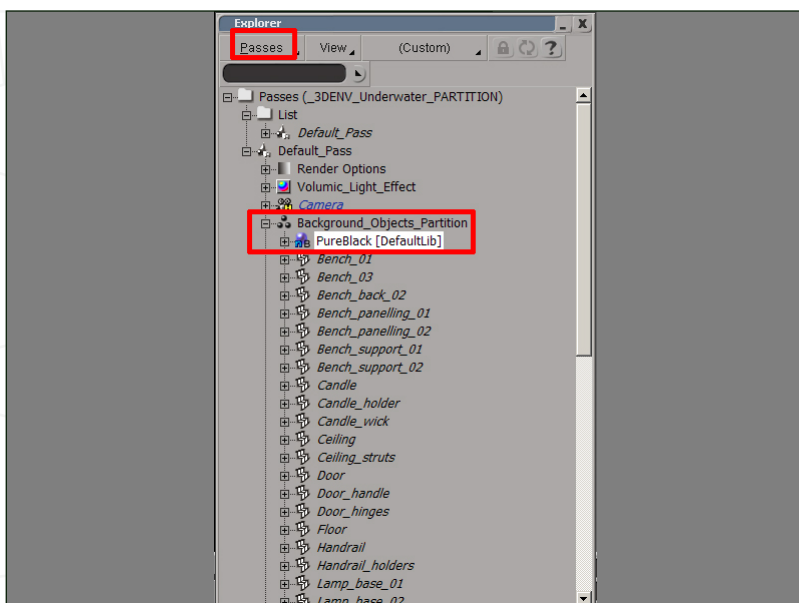
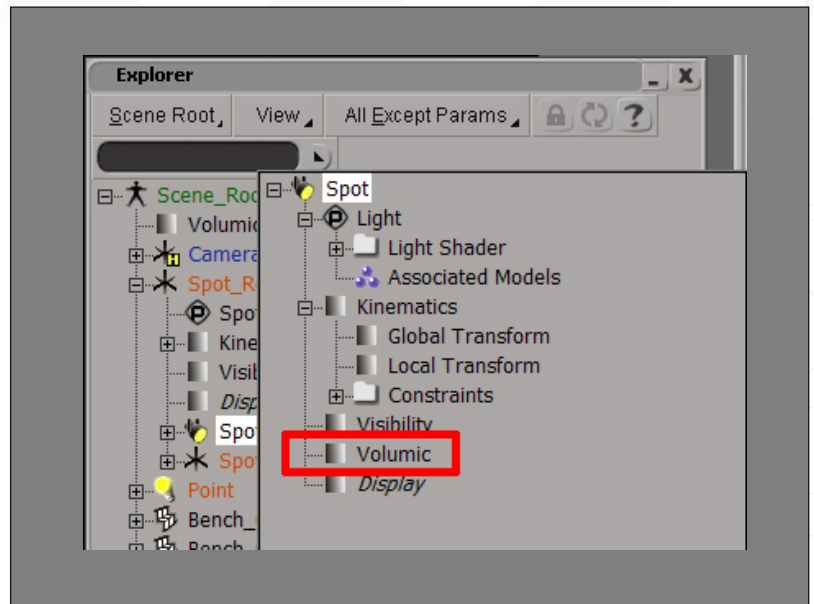


Fig 18

18. Now we need the Spot Light to act as a volume light, and also we need it to cast volume shadows. So open the 3DENV_Underwater_Volume.scn scene file. Open the XSI Explorer and explore the scene's passes. As you can see, a new PureBlack material was assigned to the Background Object Partition. This will make all the objects in the scene appear black; in this way we'll isolate the Volume light, so we can render it and composite it in Photoshop or similar 2D applications. (Fig18)

19. Select the Spot light and explore its properties. As you can see, there's a new Volumic node between its nodes. If you want you can double click on it and inspect its parameters to change the volume effect. (Fig19)

Fig 19



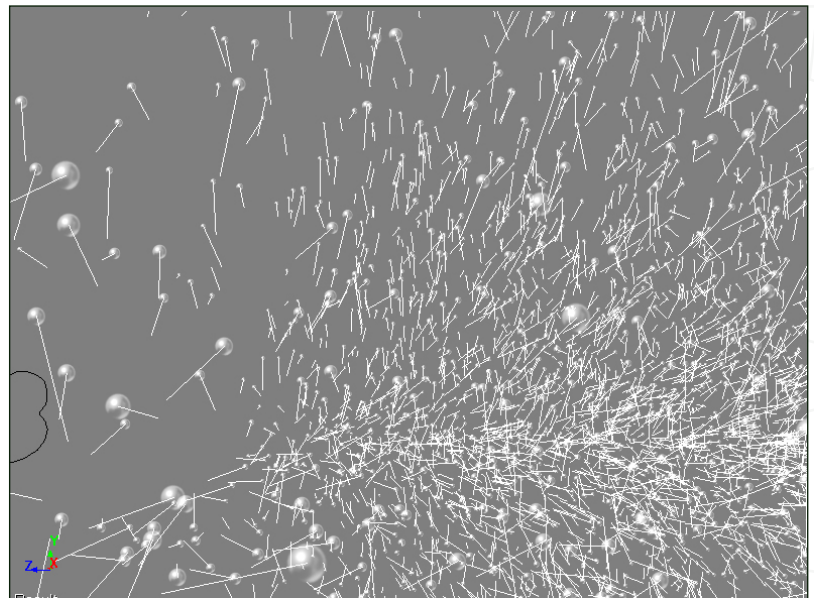
20. Render the Volume pass and save it as a picture. Just like earlier, make sure that you use the same output size and aspect ratio as for the original rendering and AO Pass. (Fig20)

Fig 20



21. Lastly, we need a particle layer to composite over the rendering. Open the 3DENV_Underwater_Particles.scn scene file. As you can see from the capture in Fig21, a particle system was created and associated with the floor object, so as to make it emit particles.

Fig 21



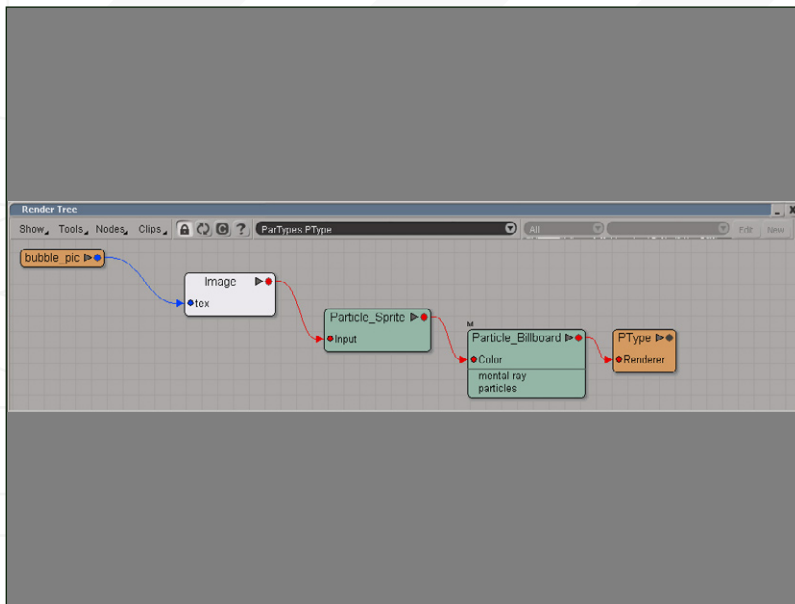


Fig 22

22. If you open the Render Tree, you can find the particle shader assigned to the system. A new sprite node was created with a default bubble picture as an input (you can find the bubble texture in your default XSI/data/samples directory). (Fig22)



Fig 23

23. The particle solution is cached, so you just have to play it and choose a frame where the particles are all over the scene. Then you can render the particles pass and save it as a picture. (Fig23)

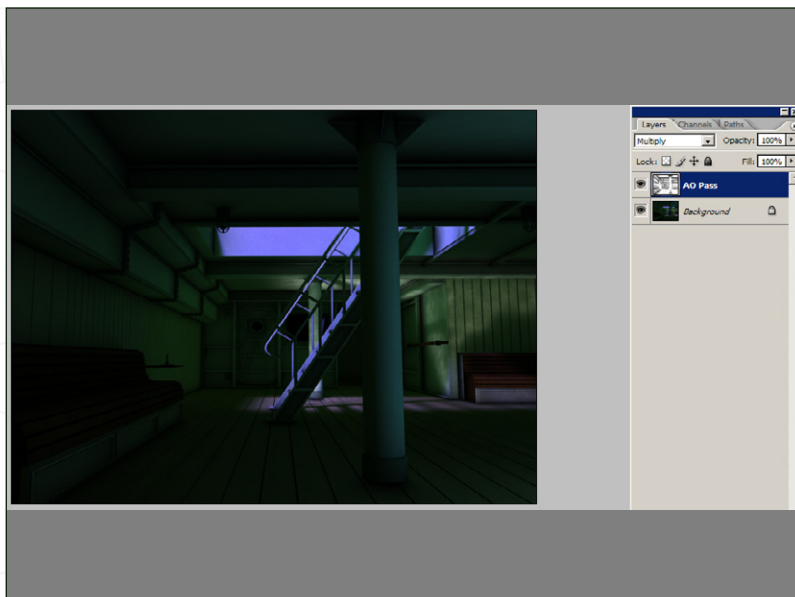
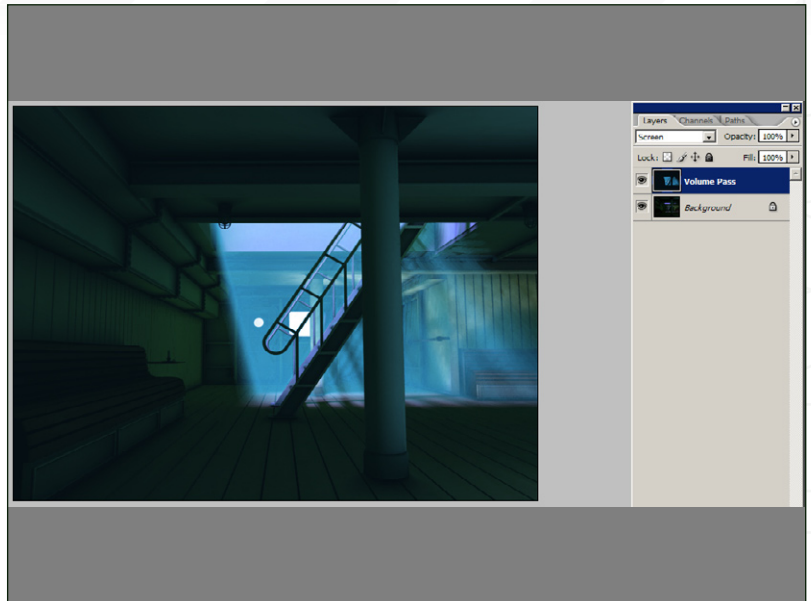


Fig 24

24. Now that we have all the elements needed, we can start compositing inside Photoshop. Open the AO Pass picture and paste it over the original rendering. Change its blending mode to Multiply. (Fig24)

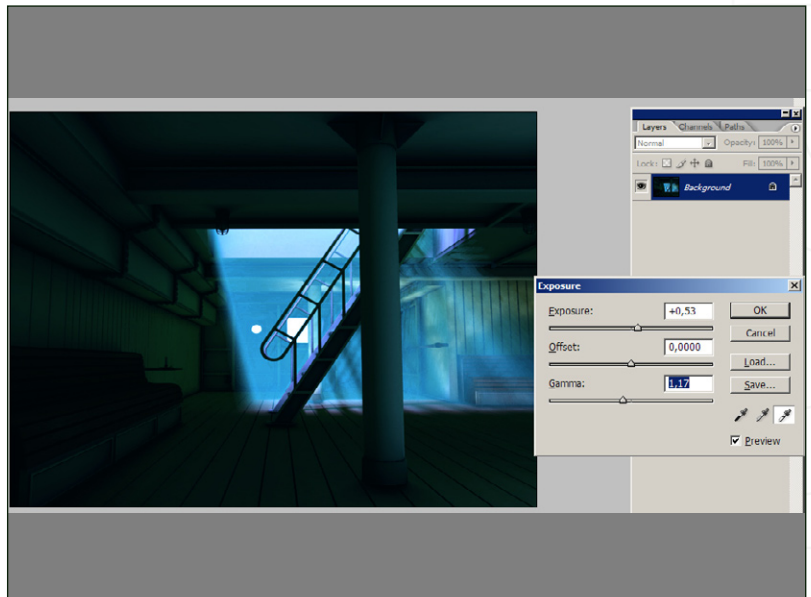
25. Flatten the two layers together and import the Volume pass. Change the blending mode to Screen and play around with the Levels tools to achieve the desired effect. (Fig25)

Fig 25



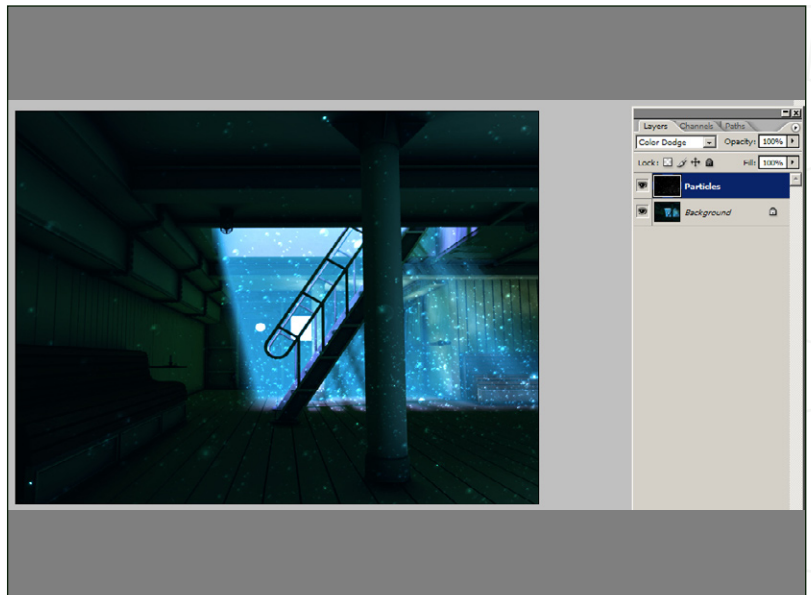
26. Now take some time to use the Exposure tool to improve the image's exposure. (Fig26)

Fig 26



27. Import the Particles layer and paste it over the rendering. Change its blending mode to Color Dodge and use the Levels tools if needed to make the particles more evident. (Fig27)

Fig 27



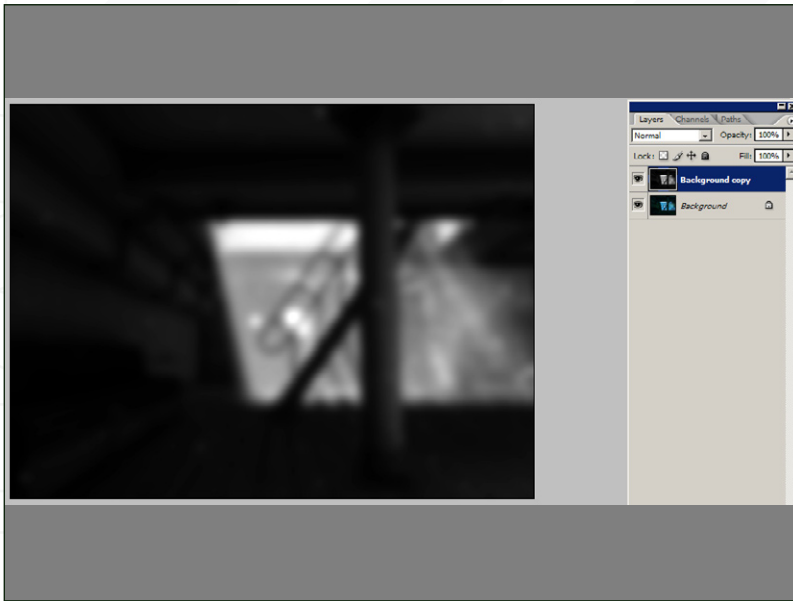


Fig 28

28. Flatten all the layers together. Duplicate the Background layer, desaturate it and apply a fair amount of Gaussian Blur to it. (Fig28)

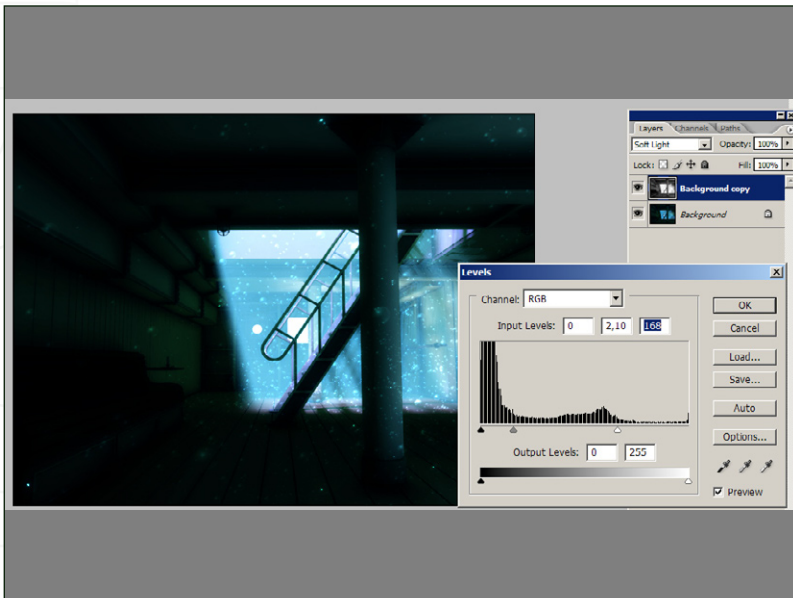
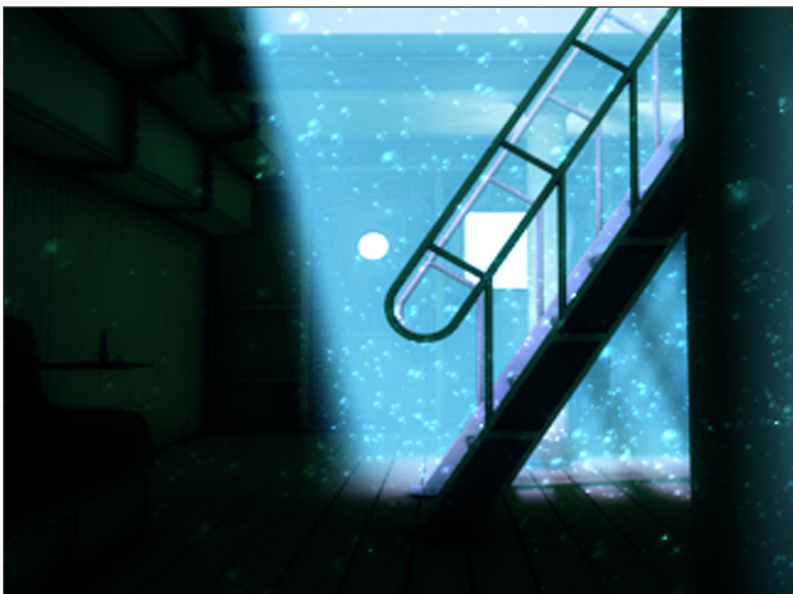


Fig 29

29. Change its blending mode to Soft Light and use the Levels tool to set the strength of the effect. (Fig29)



3D ENVIRONMENT LIGHTING PART 6 - UNDERWATER

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